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THE FLEET



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PART ONE

The Marine Corps, Its Mission, Organization, Powers
and Limitations
with special reference to
ADVANCED FLEET BASES

* * * * *

PART TWO

A Naval Expedition Involving the Landing of
A MARINE EXPEDITIONARY FORCE
with special reference to
1—The Naval Preparation
2—The Naval Execution of the Landing

* * * * *

PART THREE

Naval Support of A Landing By Gunfire
and Other Agencies

INTRODUCTION

In our studies at the Marine Corps Schools we major in combined Naval-Marine operations. There are many Naval problems that do not involve the operations of Marines other than those organically a part of the complement of the ships concerned. There are, however, no Marine problems that do not involve the Navy and Naval forces.

We are Marines, United States Navy.

In this paper we shall discuss.

a. The Marine Corps, its mission, organization, powers and limitations with special reference to the operations of a Marine Expeditionary Force as a part of the fleet and its task in connection with the establishment of advanced bases in support of the fleet.

b. A Naval expedition, involving the landing of a Marine Expeditionary Force including:

(1) The Naval preparation.

(2) The Naval execution of the landing.

(3) The Naval support by gunfire and other agencies.

War is not a private affair to be conducted by the Army, the Navy, or the Marines. War is a national affair in which every agency of the government must mobilize, organize, equip, and train their men to function smoothly and efficiently in positions on the National Team made up of three squads, the Army, the Navy, and the Body Politique.

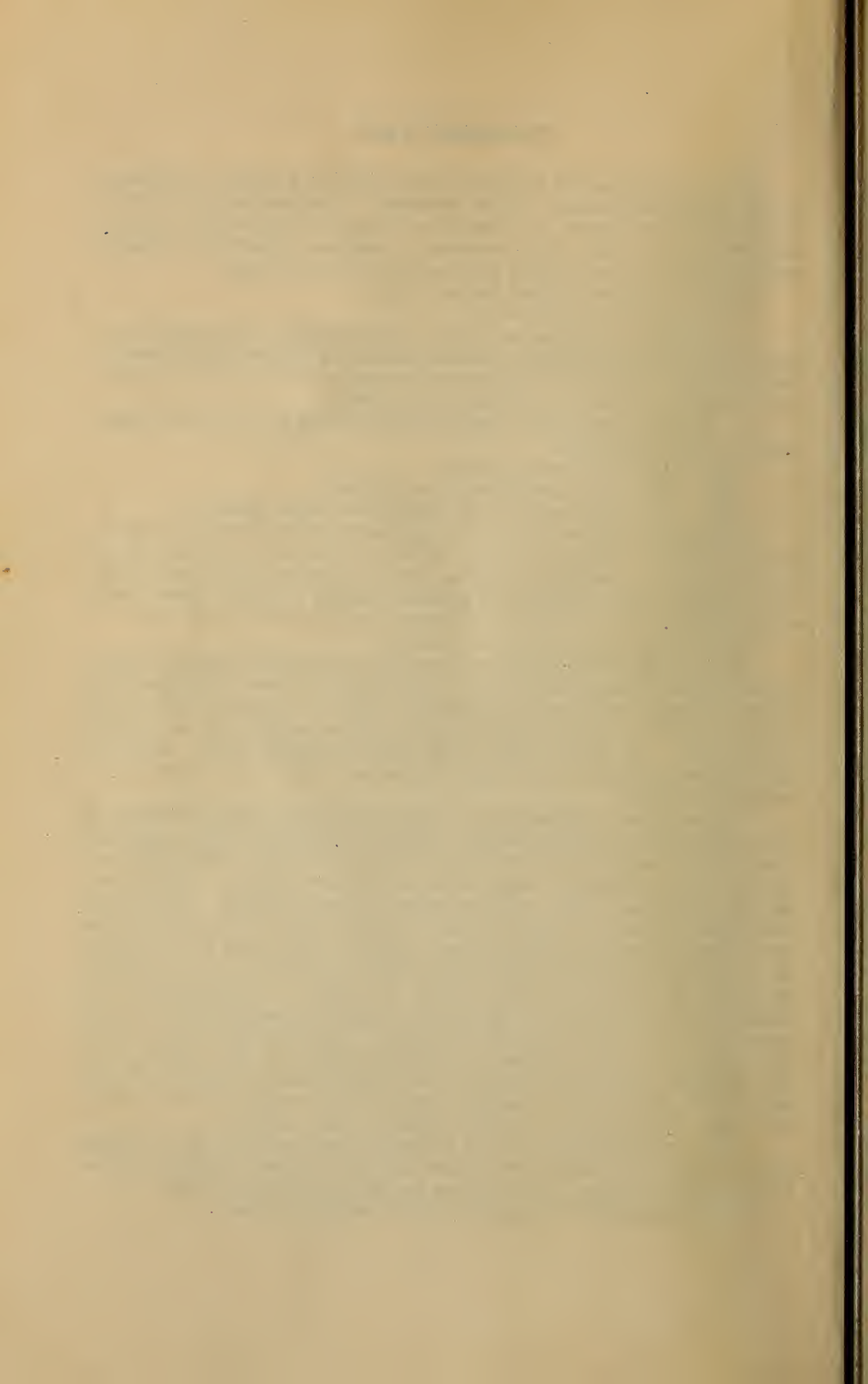
We Marines are of the Navy Squad.

As members of that squad we have two big national games to play. In one game we are the Marine Expeditionary Force supporting the Fleet. We refer to that as the game of Landing Operations. In the other game we are the Marine Expeditionary Force supporting a portion of the Fleet. We refer to that as the game of Small Wars. We have other minor games with the Bush League and Semi-Pros. which will be referred to briefly.

The purpose of this paper is to bring home to you what is meant by Naval-Marine operations, the part that each must play in the combined team, the necessity for both Naval and Marine officers to thoroughly understand the paramount importance of mutual support, coöperation, and coördination of effort, and an attempt to prove to you, if such proof is necessary, that we Marines have a mission that is as exacting as that imposed upon any other branch of the service; that that mission has been allotted to us by the Navy; that it is vital to the successful operation of the fleet in war; that in order to accomplish that mission we must have an organization suited to our peculiar type of operations; we must have the equipment and matériel that can be adapted to our various tasks; we must know how to best utilize all of our agencies, combat or otherwise; we must know our job; the Navy must know that we know our job; and the Navy must know how to do their part in assisting us to furnish them proper support.

The tactical employment of a Marine Force at and after landing will be covered in detail later in the course by means of lectures, conferences, and problems, and will not be discussed in this paper.

A discussion of the Small War Game will occur later.



THE MARINE CORPS ITS MISSION, ORGANIZATION, POWERS AND LIMITATIONS

with special reference to
ADVANCED FLEET BASES

PART ONE

You know your Corps history. How we have actively participated in every war in which our nation has engaged, expeditions on every sea, and to every continent except Australia, our own Civil and Indian Wars, quelling riots, protecting American life, property, mail, and Presidents, and a long list of other activities in which Marines have played an important part in our history and contact with other nations.

I am reminded of a factory in Baltimore which had a large sign painted across the front of the building, "Born in Baltimore, raised everywhere." It was an umbrella factory.

The Marine Corps was born in Philadelphia in 1775, and operates everywhere. End of historical sketch.

We are justly proud of our record, and sing with pride that part of our Marine Hymn—"From the Halls of Montezuma to the Shores of Tripoli, We Fight Our Country's Battles on the Land as on the Sea."

But who took us to the land where we fought? Who took us across the sea? Upon whom did the government place the initial responsibility for the enforcement of its determined policy? The NAVY. The Navy has been our father and mother, tutored us during our childhood days, afforded opportunities for us to learn by experience, watched and guarded our growth to manhood, and demanded of our nation that we be allowed to grow strong and sufficient to perform the tasks which she has assigned to us. Do not weaken in that demand.

We say, that by Congressional action, we are the oldest branch of the services. That's our story, and we'll stick to it. But we are proud of that tutelage, of that association, of the fact that the Navy has given us a job that measures up to the responsibility of any other element of the fleet.

The Marine Corps' Mission.

The mission of the Marine Corps has been defined as follows:

"To support the United States fleet, or any part thereof, and to aid the Navy in carrying out that part of the policy of the government which has been or may be assigned to it."

I do not like that definition. Definitions are very often just a collection of words which require extensive interpretations in order to arrive at the real meaning.

Support the Navy? Yes. Aid the Navy? Yes. But how? What is the nature of that support and aid?

The Joint Board has laid down that—

"The most important function of the Marine Corps (in relation to War Plans) is to seize and hold temporary advanced bases in co-operation with the fleet and defend such bases until relieved by the Army."

That is a little more definite in that it indicates what it considers the most important "war function." Perhaps we should accept that and stop there, for when all is said and done, our entire national defense force, Army, Navy, and Marines, are preparing for our maximum war function.

Some officers contend that we MUST stop there and take our maximum war effort as our Corps mission, the seizure and defense of advanced bases for the fleet. Those who thus contend forget the long record of constructive achievements and success in minor wars which has conclusively proved that the Marines have operated, during the last century and a half, in the execution of many important missions in no way related to a war with a first class power.

This war function is our mission in a major war, a war in which we must occupy bases distant from our continental limits or deny bases to any enemy attempting to force his will upon us. It involves and presupposes a war against one or more of the principal maritime powers. It calls for an expanded Marine Corps, as we could not hope to furnish the many Marine forces required in such an emergency, from our present strength.

That this is our primary mission and the one which should guide our plans and preparations for war—there can be no doubt. However, it seems to me that we have another mission—one that is related to our national policy, but not to war as an instrument of that policy. War is one thing. Punitive expeditions, military enforcement of policies and doctrines, protection of life and property, is another thing.

By the comity of nations, it is not construed as an act of war to use naval forces on foreign soil under certain conditions. By our status, as a part of the naval service, Marines may be landed on foreign territory where the local government has failed and proved itself impotent to preserve order, without it being considered as an act of war. It is for this reason that Marines have sometimes been called, "Presidential Troops" or "State Department Troops." The President, by Executive Order, may dispatch Marines to a foreign country without the consent of Congress.

We have, during the present century, had many examples of such use of Marines in Central America, West Indies, and China. A revolution, riot, rebellion or insurrection indicates an area in which the life and property of American citizens may be endangered, or, our administration's policy in the area concerned may be ignored or disregarded.

A ship or two is sent to investigate. The naval commander reports the situation serious and needs a force available with which to enforce his requests or demands on the local authority. Should the ships have Marine Detachments regularly attached or the ships landing force be large enough, this force may be sufficient.

If this force is of insufficient strength to handle the situation ashore, a Marine Expeditionary Force is added to his command, its size, composition and equipment to be determined by the situation and the area concerned.

This Marine Force protects not only Americans, but the lives and property of other foreigners in the area. The State Department announces its policies in the emergency and these policies are enforced by the Navy thru the activities of the Marines on shore.

Such expeditions do not imply permanent occupation of the territory involved. This is not an operation in which the defeat of the enemy military force results in the end of the war and a treaty of peace. This is a diplomatic war in which written notes and statesmen's phrases must be backed up and enforced by men and bullets and without delay.

The immediate availability of the Marines permits a display of firmness and decision on the part of our government which would be impossible if the administration had to resort to the Army for this work and wait for Congressional action.

And so you see we have a peace time mission which is often rather warlike and compels us to be more or less constantly on a war footing, for one never knows when the Navy may need our support in carrying out governmental policy.

The Navy is a war machine already constructed and capable of immediate action. The Marine Corps, as a part of that machine, must produce, on call, a well-trained force, familiar with naval methods, and organized and equipped for conducting shore operations essential to the success of the naval mission.

We must, therefore, add to our Marine Corps mission this emergency expeditionary work.

In addition to our war and expeditionary missions, we have other duties to perform, including detachments for service on board certain vessels of the fleet and on receiving ships; garrisons for overseas naval establishments and certain legations; guards for the protection of navy yards, ammunition depots, hospitals and prisons; and the performance and maintenance of certain administrative duties and agencies throughout the Corps.

We may deduce our MISSION to be—

TO PROVIDE AND MAINTAIN FORCES;

1. To assist the fleet in establishing and maintaining American sea-power in the theatre of war by land operations in the seizure, defense and holding of temporary advanced bases until relieved by the Army, and by such other land operations as may be essential to the prosecution of the naval campaign.
2. To support the Navy by the prompt mobilization and dispatch to designated areas of such expeditionary forces as may be required by the Navy in protecting the interests of the United States in foreign countries, and in carrying out government policies in emergencies not involving war.
3. To assist the Navy in the maintenance and defense of certain naval establishments within and without the continental limits of the United States, furnish detachments for service on board certain vessels of the fleet, and perform and maintain certain administrative duties and agencies throughout the Marine Corps.

Advanced Fleet Bases—Why We Need Them.

A glance in retrospect will clearly indicate the reason for attaching to a fleet, forces prepared and equipped for land operations.

When we changed from sail to coal, the principal maritime powers found it necessary to increase the number of ports and bases under their

control throughout the world. While European powers were active in selecting strategic points on the world trade routes, the United States, due to her non-imperialistic policy, did not visualize the natural expansion of her world interests and it was not until the time of the Spanish-American War that we obtained any ports, under our own control, outside of our own continental limits, Alaska excepted.

At that time, we entered the field and today we have Porto Rico, Culebra, Virgin Islands, Guantanamo, Panama, and treaty rights to use Corn Islands in the Atlantic, while in the Pacific, we have Hawaii, Samoa, Wake Islands, Midway, Guam, Philippines, a few other small anchorages, and the use of the Gulf of Fonseca. Of all these points, only one, Hawaii, may be called a Fleet Base.

Due to use of oil instead of coal for fuel, to increased radius of action, to treaty provisions, and to economy measures, we have been compelled to give up any attempt to maintain real naval bases in any of our far flung possessions other than Hawaii.

Even when we had an opportunity to fortify the Philippines and Guam, there was always two schools of thought as to their strategic and tactical value. In the Philippines, it was Cavite against Subig Bay or elsewhere, and Guam was always in and out of favor. Different administrations held different views with regard to defending outlying naval and military bases

But in war we must have bases from which our fleet can operate and even in a defensive war, due to the location of the Panama Canal, our permanent home bases will not suffice.

The prohibitive cost of fortifying and manning with an adequate defense force, all or even a few of our potential bases, has forced our fleet to seek a solution which will permit us to conduct war, offensive or defensive, without the permanent possession of fleet bases outside of our continental limits.

The solution of this problem was accomplished by including as a part of the fleet, a force sufficiently strong and possessed of the necessary matériel to seize, establish, develop, maintain, and defend a temporary base from which the fleet might operate against the enemy, in which the train and noncombatant vessels might be secure and protected from an enemy attack, and to which vessels might return for supplies and damaged vessels receive the necessary repairs.

Now we find the fleet carries its own mobile base with it. When the time arrives for that mobile base to actually function as a fleet base, mobility ceases to be its main requisite. It must now seek a location where it may rest secure from enemy attack, and protected from the elements.

A base seized and defended, may be only a temporary expedient. A location suitable for a temporary base today may be of little or no use in a later stage of the campaign. Fleet objective and enemy activities influence the movement of our fleet and may demand the establishment of a new base in a different area.

We must also have plans for the initial seizure of more than one base area. Military and naval secrets do get out. For the enemy to know that we had plans for the seizure of one certain locality for a fleet base in war and then to occupy that area prior to our arrival, would cause considerable embarrassment unless we had plans already prepared for the occupation of another locality, if such was available.

We cannot carry with the fleet enough personnel and matériel to establish bases, leave them behind, and still have the force necessary to establish new bases. Thus, there is a demand for great flexibility and mobility on the part of the fleet base force. Flexibility, in that it must be able to put a small or large part of its force on shore, dependent upon the importance of the situation; mobility, in that it must be able, once ashore and established, to pick-up, reembark personnel and matériel, and move on with the fleet to other areas.

The sea is not territory, has no resources, and cannot be controlled by armed forces in the same sense as land areas may be controlled, but is a great highway available in any direction for operations on broad or narrow fronts which are limited only by depth of water and an enemy's operating naval forces.

As a fleet nears its operating area, whether it be enemy or friendly territory, the sea area becomes smaller and more restricted, land areas create narrow entrances and exits to important water areas, distance from home ports has greatly increased, supplies carried with the fleet have been considerably reduced, contact with enemy forces become more frequent and make distribution of available supplies more difficult, damages to vessels become more difficult to repair by unit repair force and repair vessels, and it becomes almost mandatory that the fleet proceed to some port or some secure and protected area where facilities are or may be made available for repairing, refitting and re-supplying vessels of the fleet.

If our fleet possesses such a port in the prospective theatre of operations under our own control and secure against enemy attack, well and good. If not—then we must establish one.

The purpose of the fleet base is to serve and service the fleet. If bases are to protect ships, then we must not assign ships to protect bases, as such a base would be a liability, not an asset; a source of weakness, not of strength.

On the other hand, if the fleet escorts the base force to a suitable base area and then strikes out in enemy waters, leaving the base alone to shift for itself, the fleet may, on its return, find the base destroyed or in enemy possession.

A base, per se, does not command the sea beyond the range of its own guns. It is merely a link in the offensive chain and no chain is stronger than its single links. The link connecting the base with the active operating fleet is the line of communications to and from the base. This must be controlled and protected by the fleet and here the base must look to the fleet for protection, for so long as this communication guard is not defeated, the base will not be subjected to major attacks but only to the attacks of raiding forces which have evaded the communication guard.

To establish a base beyond the limit of control of one's own line of communication is a risk which must be carefully considered before accepting. If such a base is in enemy territory or in an area vital or critical to him (and its importance to the invader will assist the enemy in determining this), it is quite probable that the enemy would attack it. If it is in our own territory or colonial possessions and a long line of communications offered the opportunity of preventing supplies and reinforcements from reaching the base, the enemy might endeavor to isolate it, and, if successful, our installations would be of little immediate value

To cover such a base, we must (1) take our whole fleet to the base and risk the chances of a long line of communication; or (2) detach a force for its immediate protection and thereby weaken our main force; or (3) depend upon local defense; or (4) establish a secondary temporary base on our line of communications—this is an additional link in our line of communications, reduces distances between bases, simplifies control of line of communications, but at the same time indicates to the enemy an area for attack; or (5) use a combination of the above methods.

Bases, once established, become stationary and must be occupied while the fleet seeks to gain control of vital or critical sea areas.

* Mahan says the strategic value of any place depends upon its geographical location, its military strength in offense and defense, and its resources. He prescribes for offensive strength the capacity (1) to assemble and hold a large force of ships and transports, (2) to launch such force safely into the deep, (3) to follow it with continued support to the end of the campaign. For defensive strength, protection against attacks from the sea and from the land, and to which we must now add, from the air. Resources, he classes as natural and artificial, the latter including those developed by man in peace time occupation of the area and those immediately and solely created for maintenance of war.

— In selecting the position for our base we are confronted with the difficulty of deciding what constitutes the strategic value of a certain location in relation to the particular phase of the campaign. In the initial phases we must be in an area where we can develop our base, receive and install the matériel and equipment essential to a fleet base, and build up our offensive power with the minimum amount of enemy interference. And yet, at the same time, we cannot afford to establish that base so far away from our vital objectives of the campaign that having once advanced from it we can no longer protect it with our operating fleet.

Here, we might determine a limiting factor. If command of the sea area in which a base is located is temporarily lost, can the base be defended against enemy minor attacks and can it hold out against a major attack until the operating fleet returns to the base sea area? If the answer is in the affirmative, then we have sufficient defense for the base, and the base is not too far away from the fleet.

However, the tactical defense of the base sea area must be assured by the units of the operating fleet. Once the sea area around the base is controlled and commanded by enemy naval forces, the base becomes isolated and cannot function until command of the base sea area has been regained. Isolated bases fall unless relieved by the fleet or their local defense is sufficient to withstand assault during the absence of the fleet. Therefore, when a fleet leaves its base it must expect to leave it secure, or confine its operations to an area within supporting distance of the base, or risk its capture and destruction by the enemy.

The C-in-C of the U.S. Fleet, in commenting on the fleet maneuvers at Culebra in 1924, said that the problem demonstrated the hazardous nature of seizing a defended base unless the enemy battle line is destroyed or contained.

Another factor influencing the position of the base is the nature of the adjacent and surrounding land areas. Ships have not successfully attacked forts and fortified land areas, while these areas have been successfully attacked by land operations. We may then ask—is the base

better located on a small land area which is easily defended and extremely difficult for attacking troops to get ashore, such as a small island, or shall we locate it on the mainland which may be subject to land attack? Shall our bay or harbor be on the mainland, large island, small island, group of islands or on a peninsula? Port Arthur fell—Gallipoli resisted. Japan chose the Pescadores and not Keelung on the mainland of Formosa.

Gibraltar initially was only a post for news, with no water and a poor anchorage, and yet, during the 78 years after British seizure, it withstood three strenuous sieges, while Minorca, an island, during the 91 years after French took it from the Spanish, changed hands five times.

Gibraltar, with her poor harbor and fixed defenses, has been successfully defended for over 200 years, and in the absence of the fleet. Minorca, with an excellent harbor and practically no fixed defenses, can be defended only a short time in the absence of a fleet. Admiral Colomb says Minorca is a better base than Gibraltar and Mahan says that Port Mahon is "one of the most advantageous naval stations in the Mediterranean." We may then draw the conclusion that as a temporary base for local operations, Minorca was O.K., but as a permanent base, it was unsatisfactory without the expenditure of great sums for fixed defense.

Whether we use an island, small or large, or the mainland, it is evident that without permanent fixed defenses, a base in the theatre of operations is of doubtful existence without an operating fleet in the area to dispute command of the sea area. To operate the fleet—the base must be securely defended or be of a temporary nature able to move with the fleet. And right here we might note that naval battles have not occurred in the wide expanse of an ocean, but practically all have taken place near your or the enemy's bases.

The more bases we establish the more forces it takes to defend them—both matériel and troops for local defense and combatant ships to command the sea area. Every detachment weakens our mobile fighting force. Even if we are depending upon the army to take over the defense of these bases, we must transport just that additional force overseas. Therefore, we must maintain no unessential bases.

A superior fleet should be out on offensive work and should not need a harbor sufficient to hold the navies of the world. An inferior fleet should not bottle itself up in such a harbor.

The shorter the distance to fuel, supply or repair stations, the greater the number of ships in operating condition in the operating area. This brings up the matter of secondary bases. Light forces, submarines and air, when on combat or reconnaissance missions, greatly extend their radius of action if, at suitable locations between the main fleet base and the objective, secondary bases are established at which they may obtain essential operating supplies, protection against the elements, and opportunity to rest, reorganize and receive or make minor repairs after or during their operations. A damaged ship cannot always go an indefinite distance for repairs and secondary bases, like first-aid stations, may afford a temporary relief which will permit a further retirement to the main base.

These temporary, secondary operating bases, tho they may occupy small harbors or bays extending well inland, with narrow entrances and too shallow for heavy ships, also must be defended by a few mines,

some light artillery to protect the mine fields and keep destroyers and other light vessels out, perhaps some AA artillery and troops for local defense. They must be mobile and readily moved to other locations.

In a naval campaign, for an enemy to operate against us offensively or on the offensive-defensive, they too must leave their home ports and advance across a sea area. To do this, they must establish a main base in advance of their home ports as well as additional operating bases. Bases become essential to both belligerents and the seizure, occupation and control of base areas is of critical and perhaps vital importance to future operations. And so we find our fleet engaged not only in the establishment of bases for our own use, but also in the denial to the enemy of suitable base areas necessary to his operations and the occupation or destruction of bases already occupied by them.

If we capture an enemy base, we increase our own and decrease the enemy's radius of action. If we prepare a base and then fail to properly defend it, we have prepared a base for the enemy. Suffren's capture of the British base at Trincomalee is an excellent example.

We may then conclude that the whole strategic conception of our offensive naval campaign is pivoted on the location in the theatre of operations of our main fleet base, and that the strategy and tactics employed will be materially effected by the expansion and facilities of such a base, and the ability to defend and maintain it.

A Primary Advanced Fleet Base. What it Contains.

Having determined that a mobile base shall accompany the fleet and that such a base force shall include a force for land operations in the seizure and defense of advanced bases, let us consider for a moment just what this advanced base is supposed to do, and the nature of the thing to be defended.

The Base Force Commander receives an order in which his task might be outlined about as follows:

"Primary advanced base for the fleet will be established at 'A.'"

"Base Force Commander is charged with the occupation, development, administration, operation and defense of this base, and with the supply of fleet units, including transports and cargo vessels, and the supply of fresh provisions to Army units in this area."

"The operating fleet will furnish tactical defense of the sea area beyond the range of local defense."

Bearing in mind the mission of our mobile base, let us consider some of the tasks which may devolve upon the Base Force Commander.

1. Occupation.

(a) Seizure of designated base. Assisted by such additional units of the fleet as the situation demands.

(b) Movement of base force units into base area and initiation of establishment of base.

Note.—In selection of a base, we need a 50-foot channel for a damaged BB. Bremerton and Subig Bay are the only U.S. Naval establishments now in the Pacific which can receive such a ship.

2. Development.

(a) Exploitation of local resources.

(b) Collection and employment of matériel, equipment and personnel to construct and maintain such works and instal-

lations ashore as may be needed to accomplish the base mission.

- (c) Storage facilities for all kinds of naval matériel and supplies especially fuel, food, torpedoes, mines, and ammunition. Fuel storage alone might be approximated at 200,000 tons of fuel oil, 5,000 tons diesel oil, 10,000 tons gasoline, 25,000 tons coal.
- (d) Erection of barracks for housing of labor troops, technical experts essential to shore installations, relief crews for submarines and aircraft, and casuals
- (e) Erection of hospitals for care of sick and wounded, say 3,000 patients.
- (f) Construction of docks and wharves and building or repairing roads within the base area.
- (g) Erection of marine railways for destroyers, submarines, and other small craft.
- (h) Laying of mooring buoys and erection of aids to navigation.
- (i) Cold storage facilities, say, 50,000 tons.
- (j) Narrow guage railway for movement of supplies and material in base area.
- (k) Facilities for hoisting heavy cargo and matériel. Possibly the crane ship, Kearsarge.
- (l) Construction and preparation of landing fields for both land and sea planes, and for reception of dirigibles.
- (m) Provision for fresh water with necessary receptacles for storage.

3. Administration.

- (a) Receiving, housing and transfer of all naval personnel going to and coming from forces served by the base.
- (b) Quarters, subsisting, and administration of all personnel attached to the base ashore.
- (c) Disbursement of all naval funds used by forces served by the base.
- (d) Purchasing of all kinds of naval matériel and supplies.
- (e) Relations with civil government in base area.
- (f) Hospitalization and evacuation of sick and wounded.
- (g) Communication net within and without the base.
- (h) Protection of all shore installations against fire hazard and sabotage.
- (i) Establishing a rest area where officers and men, away from stress and strain, can relax, recuperate, and obtain amusement and diversion. Canteen supplies are very essential to health and contentment of personnel.

4. Operations.

- (a) Conduct of vessels in and out of the base.
- (b) Maintenance and repair of all classes of vessels.
- (c) Maintenance in operating condition of submarines and aircraft.
- (d) Operation of floating drydocks when they become available.
Say, 1 class A, 1 class B, and 4 class C.
- (e) Operation of small craft, tugs and barges for transporting and distribution of supplies at base and movement of troops and naval personnel.

- (f) Salvage operations to conserve matériel and equipment. Remember that some theatres might be several thousand miles away from home.
 - (g) Control and use of combatant vessels attached to the base.
 - (h) Operation of large number of diving crews with equipment to remove fouling from bottoms prior to arrival of drydocks and thereby increase speed and reduce fuel consumption.
5. Defense.
- (a) Mines and submarine nets layed in sea approaches, harbor entrances and channels.
 - (b) Obstacles erected or placed in certain waterways.
 - (c) Assignment of tasks to submarines, aircraft tenders, mine-layers and other combatant vessels attached to or under control of the Base Force Commander.

This far, the Base Commander has allocated tasks to the strictly, naval forces under his command. The remainder of the defense is allocated to the forces attached to the base force for land operations—the Marines.

- (d) Gun positions prepared and masked against enemy air and surface craft observation, and so located as to cover with fire the prepared mine fields, probable landing beaches, and full fire effect to the limit of range against surface vessels.
- (e) Movement of guns from ship to shore and then over variable terrain into selected positions. Terrain may be roadless and covered with tropical undergrowth.
- (f) Selection and occupation of AA gun positions.
- (g) Establishment of searchlight stations to cover selected fields of fire, land and sea approaches, and air attacks.
- (h) Rapid reconnaissance of the shore line within and adjacent to the harbor, or if a small island, the whole beach line, in order to determine the probable and possible landing beaches which might be used by an enemy and therefore, which must be defended or observed, depending upon their size, location and condition.
- (i) Construction of works for local defense of certain beach areas, including the installation of wire entanglements both on land and under the water approaches thereto.
- (j) Determination of location of local and force reserves, and construction or improvement (more often the former) of the road and trail net permitting the movement of these reserves to threatened areas. The best defense against an invading or attacking force is the power of assuming the offensive. That means having a force in the right place at the right time.
- (k) Extention, construction, improvement and maintenance of road net that will permit motor trucks to haul ammunition, equipment and supplies from base or beach to gun and reserve or support positions.
- (l) Installation of communication net within the base defense area and to ships.
- (m) Possible use of pontoon bridges for ship to shore, cross streams, or cross bights in bays or harbors.
- (n) Utilization of Marine air force in defense.

From the above, we can see that the Base Force Commander will have to prepare—

1. An anchorage plan.
2. Sortie and entry into harbor plan.
3. Base administration plan.
4. Base development plan.
5. Base repair plan.
6. Base defense plan.

Mahan says that a base should have resources. What resources will be available to a fleet establishing a base in an enemy controlled sea, other than at an established port or some other large city? Lumber—after a saw-mill has been installed to produce it from the raw material. Water—perhaps. Labor—perhaps some. We must take our resources with us, follow up with more resources and obtain them from the enemy or neutrals in that area. The Base Commander has some job.

Visualize, if you can, the shore installations, the matériel, the personnel, the staff required to operate and maintain such a base. We have projected a home yard into the theatre of operations. We will require a small Navy Department to operate and control it. It is also quite possible that the C-in-C would establish his headquarters at the base.

May I quote some statements made by Admiral Wemyss, in his, "The Navy in the Dardenelles Campaign." He organized and commanded the base at Mudros.

"The Admiralty seems to think that nothing is required of her, and that we ought to be able to carry out the work of a Portsmouth dock-yard with no appliances and insufficient men."

"I am always suffering from a shortage of everything."

"I could do with hundreds more officers and men and matériel of all sorts"

"The list of subjects to which I have to give my attention. seems endless and the work amplifies."

"I seem to have my finger in every sort of pie that ever was baked."

"The military staff seem quite incapable of grasping the fact that the sea and dry land are two different elements."

"At first, the medical arrangements were shocking, but now (July 21st), they are better."

"The work is ever increasing."

"Anything from 150 to 200 large ships, besides a veritable cloud of small craft, tugs, trawlers, steam-boats, *etc.*, might at anytime be counted in the anchorage. The average number of arrivals and departures was 50 a day, transferring this erstwhile empty harbor into one of the busiest ports in the world."

"A new town of 10,000 inhabitants has arisen. Every hut, every bit of provisions had to be landed from the storeships, for which purpose three big piers and several smaller ones had to be built."

Corbett says—

"He (Wemyss), had in fact, to create a base out of nothing and with wholly inadequate assistance. it required tact, resource and organizing ability of a high order."

At first, we have only the personnel and matériel accompanying the fleet. But replacements in both personnel and matériel are essential and our Line of Communication is soon dotted with supply ships of all

kinds and our base assumes a gradual growth which soon makes it a semi-permanent base that cannot be moved about at will. It takes on the function of a home-yard.

The fleet must seek out other areas from which to operate against the enemy. It cannot remain tied down to this growing semi-permanent base, nor can this initial base be abandoned. This advance may include the establishment of another temporary base nearer the enemy main forces or closer to our fleet's initial objective. It may involve the attack and capture of enemy temporary bases already established or the denial of areas suitable for an enemy base. In the later stages of the campaign, we will have a second or even a third Fleet Marine Force available in the Theatre of Operations for operations in support of the Fleet. But in the initial phase, the force with the fleet must turn over the defense of our first base to Army troops which have been dispatched early in the campaign for this specific purpose, if Army troops are involved in the campaign, and the Fleet Marine Force must be ready to reembark and move on with the fleet to seize new bases. We have established our repair base, we now need an operating base.

It is with the seizure, defense and holding of these temporary bases that the Marines are concerned.

The first and foremost job of the Marines is to get the personnel and matériel essential to the defense of the base, ashore and installed in readiness to resist any enemy attack.

We may well imagine that if the enemy intended to resist the establishing of our base, and, if they had a proper force ready, an attack by them, while we are in the initial stages of preparing our defense, would be most dangerous to us.

We must also consider possible loss of transports due to torpedo and air attack. The loss of one transport might so reduce the strength of the Fleet Marine Force that the accomplishment of its mission might be in great jeopardy. This inclines us to the belief that while large transports have some advantages, yet the disposition of the Marine Forces on smaller transports might be a safety precaution well worth considering. To put our eggs in too large baskets may cause us to arrive with insufficient eggs.

— Size and Composition of the Fleet Marine Force.

The question now confronting us is—how large a force will a fleet need to so defend an advanced base, and, if the selected base area is so occupied and defended by the enemy, how large a force will we need to take it?

It is often customary, in seeking a solution to a military problem, to say that it depends upon the situation, so, in this case, we will say it depends upon the nature of the war, the strength of our enemy, the distance of the theatre of operations from our home bases, and the number of areas in the theatre of operations suitable for fleet bases.

If we are going into an area in which there is only one possible location available for a fleet base, it is quite possible that area would or might be occupied by the enemy and we would certainly require a strong force for land operations to capture the base area.

Jane, in his "Heresies of Sea Power," goes so far as to say that—
 "Bases—not fleets, will surely be the aim of all naval warfare. To destroy a base is worth far more risk and far more loss than to defeat a fleet."

He then continues, that hardly an impregnable base exists today; that actual impregnability is conferred only by the existence of a fleet; that fleet and base are interdependent, except that fleet cannot exist without a base, while base can exist for considerable period without a fleet; and tries to prove his point by saying that the battle of Mukden, and the sea fight at Tsushima would not have been fought had Togo destroyed Vladivostok as a naval base, as, the Russian Baltic Fleet would have not come to the Far East.

Whether we agree with Jane or not, we must admit that a fleet is hopeless without a base; and that a naval base located within range of a powerful enemy will always be exposed to attack; and if there are several suitable base areas in a theatre of operations nearer to an enemy's home bases than our own, we might expect that more than one of these suitable areas might be occupied.

On the other hand, if we were engaged in a war with a minor power, the strength, equipment and matériel for our advanced base force would be materially different from that required in a war in the Western Pacific or Eastern Atlantic.

A most important factor in determining the strength of such a force is the use made of and the missions assigned to it.

In an advance to an enemy theatre, one commander, due to little or no opposition, decides to occupy bases in a large group of islands and thereby have in his possession important points on his long line of communications. To garrison these points he drops off detachments of his Fleet Marine Force. Infantry alone cannot furnish proper defense so he puts some artillery, some AA guns and possibly some air forces ashore at each place.

The Fleet arrives in the enemy theatre and is met by a strong enemy force. Necessity for a fleet base becomes paramount in order that he may dispose of his train, noncombatant and damaged ships. Ports x and y are occupied by the enemy with an unknown number of troops defending both places.

The C-in-C has a reduced advanced base force left, insufficient in strength to support the fleet in retaking and defending either x or y.

But a Base Must be established and it *Must* be defended or the entire campaign is liable to failure. He must seek an unoccupied area and park his impedimenta. So he sends the Base Force into the Gulf of w or z Bay and the Base Force Commander, with insufficient artillery, with insufficient shore AA guns, with insufficient searchlights, with reduced land transportation, without sufficient troops trained in land operations, faces the task of calling upon the ships of the train to mobilize a landing force to support his reduced advanced base forces for operations on shore in defense of the base.

Another commander, appreciating the purpose and function of an advanced base force, realizing the absolute necessity for having a proper fleet base after his arrival in the enemy theatre, knowing full well that it may require the extreme effort of his entire base force to establish, defend and maintain such a base, makes no detachment from this force, unless the situation demands a temporary haven for the train while the fleet fights, in which case, when the emergency has passed, he reembarks the detachment and takes it along with the fleet.

We have no reason to criticize the action of this first commander. For years we have been talking about "stepping-stones." These stepping-

stones were intended to be occupied as temporary bases and semi-permanent points on our line of communications, and we have seen it stated that such an advance may involve the early capture, occupation and control of many of the anchorages in areas contiguous to the enemy theatre. But this was when our cruising radius was shorter; we could not take our fleet to an enemy theatre in one jump; and our mobile fleet base was not as developed as it is today.

— Our guiding factor is the movement and operations of the Enemy Fleet. We may easily visualize meeting a strong enemy force in island areas. We must engage them. We must protect our train. Some small island must be occupied and utilized as a temporary base. This small island may be occupied by an enemy detachment and our seizure of it may require the assistance of air attack and ships gunfire in support of the advance base force in the attack. Artillery and AA artillery are hurriedly placed on shore and troops and equipment disposed to best possible temporary protection of the train, which moves into the protected anchorages.

The Fleet, then free to engage the enemy, seeks such action, and when the engagement is over, returns to the island, refuels, reorganizes its forces, reembarks its advanced Base Force Detachments, and proceeds.

Just imagine, if you can, the tremendous amount of training, the absolute necessity of doing the correct thing, the time factor, and the rapidity and smoothness with which such an operation must be carried out.

Were it possible to actually survey every conceivable base which we might use in war and prepare plans for the occupation and defense of these areas, we would still have a tremendous problem of execution. But when we seize an unfamiliar area, when we disembark in foreign territory, when we meet organized resistance from defending forces, it becomes one of the most difficult of war operations.

And so we see that it is most important that the higher commander and his staff realize the function of the Fleet Marine Force and utilize it for the purpose for which it was intended, and that every naval and marine officer have a working knowledge of the methods by which the Fleet Marine Force hope and expect to accomplish their mission in supporting the fleet.

I have never seen such an advanced base as is contemplated for our U. S. Fleet in war. You have never seen one. To say what the composition of such an advanced base force should be to seize and defend such a base is highly problematical.

I agree with those naval experts who contend that our organization must not parallel the Army. The Army must have a tremendous amount of matériel, impedimenta, supplies and a large overhead in personnel, in order to operate inland with a long line of communications and unsupported except by their own elements. The Marines operate on a short line of communications; their supplies are on board ship or on the beach; they man their matériel with less personnel; their overhead is reduced to a minimum; they are supported by the fleet; and, consequently, their organization must be distinctly at variance with the regular Army. We must take lessons out of our own book of experience and, with the help and assistance of the Navy, maintain an organization that will fit our own peculiar problems.

Command of certain sea areas is essential to the movement of large Army forces overseas. Here we find a real distinction between the Marine and Army forces. The Marine Advanced Base Force is one of the instruments necessary to gain control of those sea areas.

Whether the situation be one requiring a company to protect the American Consulate in some small Central American republic or a major effort requiring an advanced base in support of the fleet, the Marine Corps is supposed to be organized and ready to answer the call to the limit of its personnel and matériel.

The nature of our duties and emergency calls demand great flexibility in our organization. As a Fire Department may send a chemical engine or the major portion of the entire city equipment to fight a fire, the Marines must be so organized that we may send all or any part of our equipment to handle the emergency. If we do not have the proper equipment, then we must use the equipment we have, for we go just the same.

We are being reduced in so far as personnel is concerned but only lack of funds should prevent our being ready and prepared with the necessary matériel. Again I repeat, it takes months and months to provide guns and equipment; it takes a relatively short time to provide and train the men to use them.

If we determine the type and amount of equipment and matériel essential to the FMF task in the seizure and defense of an advanced base, provide it, build up an organization to fit it, then, the amount of personnel may fluctuate, within certain limits, and we are still able to act in the emergency.

You see what our job is: First, determine the type of equipment and matériel. Second, build an organization suited to the operations and employment of the equipment and matériel. Third, provide the equipment and personnel.

The Marine Corps Schools are making an effort to solve the first and second requirements. The solution to the third requirement rests in the hands of those who control the policies of the Navy and government pocket book.

The Armies and Navies of the world are constantly developing weapons of war. Many of these weapons have particular application to particular and special situations. The personnel for their operation, is especially organized, equipped and trained. They play a part in the military or naval set-up of their national defense scheme. The mere probability of their use in future wars may be sufficient reason for including a small or large expenditure of government funds to provide for them. This probability may be based entirely on geographical location. Compare the strength and organization of the national defense systems of the world's major and minor powers, and you will soon note the part that coastlines, mountain chains, navigable rivers, the broad open spaces and contiguity to other powers play in each system.

We Marines are not an Army and the sooner we all come to a full realization of that fact, the better for our own American national defense scheme.

The Army is planning for the mobilization of a huge force of four million men organized into Army groups. It takes months and months to provide and equip that Army. The factories of the United States

start the mass production of war matériel after the emergency arrives. It must provide for every reasonable contingency in war. It should possess every essential to manage and operate that huge machine of four million organized men backed by a man-power of twenty-five million availables. They may be required to operate in the frozen north or the tropical south.

* The Marine Corps is planning for the mobilization of a small, fast moving, striking force to move with the fleet on mobilization day. We cannot wait for factories to turn out matériel and equipment. We cannot wait for a selective service law to provide men for training camps, spend months in training, and expect to operate with the fleet. The fleet in commission is always ready. The occupation of bases or the denial of such areas to any enemy cannot wait. The Navy acts. We must act when it does.

If an Army requires these many weapons in its organization, what does a Fleet Marine Force need? The Army needs all of the artillery noted on page 30 by the hundred of guns. If we take all of those types of guns do we become a small army and do we fail to remain that fast, striking force capable of moving with the Fleet on M Day?

Read again the mission of the Marines as given in the early part of this paper. We see there no task involving the operation of an Army. We do see, however, a reference to land operations essential to the prosecution of the naval campaign, and expeditions in emergencies not involving war.

If it is an Army job, the government will send an Army to do the job.

If it is a naval job, requiring land operations as a part of the naval plan and the magnitude of the land operations does not require a large force, but does require a fast, mobile force, capable of operating on shore in seizing, holding or denying shore areas for the fleet, then the Marines will do it.

The Army, due to its size and diversity of matériel, might organize a hundred forces to do a hundred different jobs.

The Marine Corps cannot have that diversity of equipment and matériel and still remain the Marine Corps.

We are an emergency force. A doctor, called in the middle of the night, takes his emergency kit, well knowing that based on years of his own experience and that of others before him, there is in that small bag that which will, in all probabilities, meet the situation with which he may be confronted when he sees his patient. The doctor may have to call in more assistance in the way of more doctors, surgical instruments, hospitals, etc. If so, he calls them.

Our organization in the Marine Corps must be like that doctor's emergency kit. We might like to have an organization for operations in expeditions against unorganized forces; another for the seizure and occupation of fortified coastal cities; another for fortified cities; another for the occupation of countries in small wars; another to accompany the fleet to provide the land defense of a major fleet base; another to capture an already occupied base; and so we might go on listing the various types of operations that a Marine Expeditionary Force might be called upon to perform.

Faced with all of these possibilities our emergency kit becomes so large and unwieldy that we lose our identity as Marines. We become like a small army.

The kit we need is one organization so constructed that with the least amount of change by addition or subtraction, we may jump-off on an emergency mission and feel assured that based on our own years of experience and the experience of others, we have in that organization the material, equipment, and personnel to meet the situation. *

If the job is too big for an adequate Marine Corps it is not a Marine Corps job; and, if the support afforded by the fleet is not adequate then a call is sent in for more doctors, surgical instruments, etc., and they are furnished by the Army.

Hence, we may conclude that the size and composition of the Marine Force to accompany the fleet depends largely upon the strategical plan as conceived by the C-in-C of the Fleet prior to the initiation of war operations.

If Dewey had had a regiment of Marines with his squadron at Manila, there might have been no Philippine insurrection.

Matériel and Personnel.

The problem of transporting an advanced base force with a Fleet Marine Force overseas may appear to be a simple one, but I will venture the statement that no other operation in war requires more careful planning than a movement of troops overseas. And when we consider the task of moving an Army of 300,000 men, it becomes a tremendous problem and one the Navy cannot afford to neglect—and I am not referring to tactical plans and naval escorts. Efficient loading, handling, transporting, care enroute, feeding, disembarking of cargo and personnel, maintenance of personnel in high morale and good physical condition ready for combat, is a serious undertaking. And remember, we will not be operating in friendly ports as we were in the World War. The more study, the more thought the Navy gives to the subject, the better prepared we will be to avoid the disasters which have occurred and will occur again unless we broadcast more knowledge about the subject than is now known. No plan stuck away in the secret archives of the Navy Department, however excellent it may be, can be expected to function efficiently, when the functioneers remain uninformed about the subject matter of the plans. What to do and how to do it must be a matter of common knowledge.

A long, overseas movement is extremely hard on troops aboard transports. Sufficient space should be available to avoid crowding and permit a certain amount of movement and recreational facilities as well as physical upkeep. Without it, we breed sickness, unhealthy conditions which may reduce our fighting strength. We must also realize that many, in fact, most of our Theatres of Operations will include the Tropics. The troops also have their personal and individual equipment which is not included in the cargo tonnage.

We should consider the desirability of allocating to the Marine Corps, type vessels such as the Dollar Line and then with ships' plans, prepare our loading and embarkation plans now—today. If, at the last moment, type vessel is changed, we are no worse off than now. Such allocation would materially increase our readiness to embark and join the fleet on M Day.

To occupy and defend a small unoccupied island is one thing. To seize and capture a strongly defended large island is another thing. To seize and defend a harbor in an enemy mainland is still another thing. We do not know where our base may be or what will be the enemy

reaction to our advance or how many bases we will have to establish. Mahan says that in overseas operations we need two advanced bases (one of the first order) each near enough to support the other, but far enough apart to force the enemy to divide his force to watch both. Frost, in his "Conduct of an overseas naval campaign," says we need a total of six and preferably eleven major and minor bases.

We must determine upon the equipment and matériel necessary to seize and properly defend a base, and the amount of personnel necessary to serve that equipment and matériel in repelling minor attacks and making it extremely difficult for major attacks to succeed in capturing the base.

There has been talk and plans for X0,000 Marines accompanying the Fleet. That's fine—but where are we going to get that many Marines on M Day?

The President can, by executive order, increase our strength to 27,400, but that, with normal deductions, is a long way from X0,000.

Furthermore, if it were possible to make that number available, the great majority of them would be untrained for the work, due to hurried recruiting and dispatch by M Day.

We must get down to brass tacks and deal with what we have "in being" and actually in sight by M Day.

It seems to me the services are too much inclined, now-a-days, to dream and plan for an army of 4,000,000 men, a navy of 400,000, a Marine Corps of 150,000, rather than perfect and actually work with the organization as it is today and provided by Congress.

A perfect fighting organization, however small it may be, is capable of exerting its full strength up to its limitations, and who knows, a quick, rapid blow made by that perfect fighting machine may so disorganize and disrupt enemy plans that the dream force may be unnecessary. That is one of the factors behind the British effort to mechanize their Army.

On the other hand, if a large force is essential, then our small, well organized and trained force will form a nucleus upon which we may expand our national forces as the situation, time and other factors demand.

We cannot furnish X0,000 Marines on M Day, unless Congress increases the Corps in sufficient time prior to M Day for us to enlist, train, equip, and organize this force.

But there is a minimum limit to our organized strength. Let us deal with facts and figures and not theoretical fancies. The Marine Corps can, with a strength of 18,000 (our strength is now 15,343), mobilize from the regular Marine Corps a force of 8,000, without disturbing the normal peace time foreign garrisons and the 2,100 Marines on duty with the Fleet.

To this must be added our Marine Corps organized Reserve of 10,000.

This strips the Corps to the bone, at 18,000 strength, and replacements would be needed to partially fill the most important places reduced by this emergency force.

The normal distribution of all Marine Corps by groups of duty is—in round hundreds of men:—(based on 18,000 strength)

Navy Yard Guards.....	2,800
Ammunition Depots.....	500
Recruit Depots.....	1,400
Schools.....	300
Foreign Shore.....	2,600
Sea Duty.....	2,100
Prisons.....	300
Receiving Ships.....	200
Hospital Guards.....	100
Aviation.....	1,000
Expeditionary Forces.....	5,000
Misc., staff and Administration.....	800
Pool.....	900
	<hr/>
	18,000

Today we have 800 Marines in Haiti, and 1700 in China; that would be a long way from the fleet on mobilization day. We always have organizations on expeditionary duty. That is our normal lot. During the past thirty-three years, we have had an expeditionary force in the field every year. We have, during this period, actually organized and maintained in the field, thirteen different brigades, in addition to those organized in the States for maneuvers, mail-guard and other purposes. Some of these brigades were at their stations over a long period of time as in the Philippines, Haiti, Santo Domingo, Nicaragua, and China. We have had an opportunity to learn by experience, which has been accorded no other branch of the service. We have had our own problems which have been Marine Corps problems and could not have been solved by any other force.

Our association and work with the Navy, who is first to investigate and control the many situations arising in foreign contacts, make us immediately available for any and every conceivable sort of duty, and we execute missions for the Navy, War, State, Post Office, and Interior Departments of our government.

But where are we going to be and what are we going to be doing when the fleet goes forth to enforce the policies of our government?

In July, 1928, with an actual strength of 17,363, the Marine Corps had 11,400 Marines on duty outside the continental limits of the United States. (9187 foreign, 1540 sea, 226 air, foreign: 447 enroute). Where would we have found an advanced base force to support the Fleet in a major war? In a western Pacific war, our China Marines would be caught in a bag. We might or might not have had to abandon our Nicaraguan policy with the 5000 Marines there—rush them to the West Coast of U. S., (and availability of transports would be very uncertain)—ship the additional advanced base equipment to San Diego or San Francisco to meet them, as they are not equipped in Nicaragua for advanced base work—and be ready by M Day.

When I compiled those figures—11,400 out of 17,363—I wondered how did we do it. You have no idea of the protests put up by many naval commanding officers throughout the Service. Protesting against any reduction in their Marines. They saw the picture from their own narrow viewpoint. They did not think of it as a government problem involving huge stakes in the Far East and Central America and realize that it was a Navy job and Marines would not be taken

away from them unless they were needed. On the contrary, their thought was, that with a Corps of 18,000 men, they can get their men some place else. They did not know nor care that 66% of the Corps was on active duty outside of the states.

There is one thing we learn at this school, to examine the problem from the viewpoint of the higher commander, and, when we leave here, we more fully realize that as individual commanders, our unit is only a very small part of the whole team, and it is the team that must function smoothly and efficiently. And the Marine Corps maintained that pressure for two years during 1927, 1928, and into 1929. We had to maintain our peace time and administrative agencies and still replace 66% of our Corps with the remaining 33%. Some job, and yet we did it without the increase of a single man or neglecting our normal routine tasks, with the possible exception of landing the Marines from the fleet in Nicaragua for a certain period.

Here again we meet the question of *matériel readiness*. The President can, by Executive Order, increase our strength to 27,400. Immediately 12,000 trained Marines are made available. But the President cannot make 26,000 yard guns and have them ready immediately. From the personnel point of view, we may be O.K. We may lose the Marines in China; we may retain the force in Haiti and other foreign stations; and still have the personnel available on M Day to accompany the fleet. But have we the *matériel*? Is the Marine Corps equipped with the proper guns, the proper landing boats, the proper offensive and defensive weapons necessary to give us a 50—50 chance of succeeding in our task?

Naval experts agree that an advanced base force is essential for seizing and defending fleet bases, and to establish bridgeheads for exploitation by the Army. They also agree that the Marines are the only troops that are properly indoctrinated, trained and organized for this work in coöperation with the fleet. They also agree that the Marine Corps must be able to furnish the required force at the outbreak of war.

Mobility is one of our great assets, but mobility, without the power to deliver the punch, the decisive blow, when you reach the field of activity, is poor strategy, poor tactics and unsound from every point of view.

In 1898, at Guantanamo, the Marines fought on shore with rifle, bayonet, ammunition belt and clothed only in a pair of pants. In many of our past expeditions we have been opposed by unorganized troops who were equipped with antiquated rifles, poor ammunition and no modern weapons. Our advanced base forces were equipped with navy broadside five and seven inch guns and God certainly had to help the Marines get them ashore and into position.

Today, in our expeditionary work in Central America and West Indies, we are still opposed by unorganized troops, in the modern sense, but their equipment is no longer totally antiquated. They are armed with machine guns, machine rifles, and in some cases, light artillery. They no longer attempt to meet the Marines on even terms with a "pato de mulo."

In Tientsin, in 1928, the possession by the Third Brigade Marines, and the witnessing by the Chinese of the efficient handling of artillery, tanks, aviation and motor transport (and every opportunity was afforded Chinese officials both civil and military to witness demonstrations of our

equipment) played an important part in the maintenance of almost normal conditions in that city, during a prolonged period in which it was surrounded by approximately 250,000 Chinese troops. We had the punch and they knew it. For a time, we were the only allied troops equipped with artillery and planes and that fact played not only on the imagination of the Chinese, but had a very pronounced effect on the plans and proposals of the other allied military forces in Tientsin, as refusal on the part of the Third Brigade to support their plans, in nearly every case caused a modification or a complete abandonment of their proposals. And this attitude toward the Third Brigade continued even when the Brigade in Tientsin was reduced to 1500 men, for the reason that we still had, as a part of our force, artillery and planes.

Offensive and defensive power is essential in the seizure and defense of advanced bases, if opposed by a combined force of all arms. We need more than 75mm artillery, limited to an effective range of 8,000 yards, to guarantee the protection of our base area. Lingayen Gulf is twenty-three miles wide. Samana Bay is ten and one-half miles wide. The present 155mm gun has an effective range of 17,000 yards and the new 155mm gun a range of 26,000 yards. Naval aircraft from carriers will be the only air support in the initial operations of seizing a base, (unless the Fleet Base Force provides a carrier for Marine planes) but when the base is established, and the fleet goes forth to seek issue with the enemy, the carriers go with the fleet. The Langley and the Wright, if both attached to the Base Force, would supply and maintain land and sea-planes for defense of the base. But would forty-eight planes be sufficient, and are we correct in saying that planes can patrol the mine fields and, by bombing, produce the same or better effect than shore artillery? A gun, especially from shore installations, is not prevented from delivering an effective fire due to fog, storm, etc. Can we risk the loss of our base if bad weather sets in? AA guns on board vessels of the Base Force or combatant vessels anchored in the base area, are not ample protection against air raids on shore installations. Shore defenses must have their own AA batteries.

I believe that Marine Forces should reduce their equipment and impedimenta to an absolute minimum. But just what that minimum should be is a muchly discussed question both within and without Marine Corps circles. A battle cruiser sacrifices armor in order to increase speed, but its hitting power is equal to that of the heavier armored battleship. The Marine Corps advanced base force has a mission to accomplish a certain task in support of the fleet. That force must be so equipped that the C-in-C will have every reason to believe that it will not fail in the accomplishment of that task. If heavy artillery is essential; then heavy artillery must be provided. We would not use the 155mm gun in Small Wars nor should we be expected in a major war to capture and hold a defended keypoint with machine guns.

To attack a shore position is one thing and to defend it is another. Each job requires certain special tools and to say that any particular equipment should be left behind because it cannot be used in both jobs, is unsound. Our heavy gun may be of no use in the initial landing, but once landed, they become a powerful defense weapon. No vessel will cruise with impunity within range of these guns.

The Marine Corps must not be limited in its matériel if the matériel is necessary for the proper support of the fleet, and is or can be made

available. And if it is not available, then we must take the necessary steps to provide it.

Will the Navy need a fleet base? Yes.

Will the Navy need a force possessed of the power of holding it once in your possession? Yes

Then why argue about self-evident facts?

Increased range in both ships and shore guns has entirely altered the requisites of a suitable area for a fleet base. You must have gunfire that will not only keep the enemy out of range of your base force vessels, but also permit the sortie of your own vessels from within the base.

To accomplish this, the ideal base is a harbor within a harbor—so that land, with an entrance channel, intervenes between the two water areas. On the extreme outboard edge of this land, we place long range shore guns and find that the distance—inner harbor anchorage to shore guns—plus effective range of shore guns—is greatly in excess of the range of enemy naval guns. In many base areas, the entire protection of the vessels in the base might depend upon these guns, as in harbors surrounded by high hills and mountains where the flat trajectoried guns would be unable to fire effectively. Limit the advanced base artillery to 75^m/_m guns and you permit an enemy heavy cruiser to stand off and drop eight-inch shells in the harbor while they are under no gunfire and menaced only by our base air force, and in non-flying weather, under no menace at all.

Artillery today is the same artillery we used in 1918, but the artillery of tomorrow will be different. Greater mobility, greater range, greater accuracy, will have a great influence on future operations. Let me mention just a few of those changes:

<u>Gun</u>	<u>Present Range</u>	<u>New Range</u>
37 ^m / _m	1,500	6,700
3" inf. mortar	800	3,300
6" inf. mortar	1,860	3,960
75 ^m / _m gun	8,000	14,880
75 ^m / _m pack how. (new)	-----	9,200
4.7 gun (new)	-----	20,050
105 ^m / _m gun & how. (new)	-----	11,960
155 ^m / _m gun	17,000	26,000
155 ^m / _m how.	12,000	16,390
6"—53 (Naval)	27,000	
240 ^m / _m how.	16,390	25,000
8" how.	-----	18,700
8" how. (Naval)	2,600	
8" gun	-----	22,325
In AA		
Fixed Mounts	<u>Vertical range</u>	<u>Horizontal range</u>
37 ^m / _m	5,000	7,300
3"	9,700	14,200
105 ^m / _m	14,000	20,000
Mobile Mounts		
4.7	12,500	20,000
37 ^m / _m & 3"	Same as fixed mounts.	

Now we can see what the long range gun will be able to do. Ships anchored 2000 or 6000 yards in rear of these guns will be out of range of enemy heavy cruisers unless these heavy cruisers are willing to come within range of the 26,000 yards.

What we need to do is to stop all theoretical conversations and estimates about whether the advanced base force shall have heavy or light artillery; whether the air work shall be done by the naval air force or the Marine air units; whether the force shall be of a strength of 5,000 or X0,000; whether the landing force can be put ashore in transportation now available or must special boats be constructed which will be seaworthy and capable of landing on difficult beaches without being smashed up, and make their own way to the beach; whether the landing boats shall be small and carry a small group or large and carry a large group; whether modern shore guns will permit transports to get within 26,000 yards of the beach before disembarking troops; whether we must be able to land our heavy guns on the beach at the place to be installed or whether they must be handled at improvised wharves capable of handling heavy weights and then taken overland to selected gun positions; what naval gun-fire from supporting ships may be expected to do; what shall be the fire control system used for both naval supporting and shore guns; what system of communications shall be used to properly coördinate ships and shore activities; what type of artillery is best suited to protect landing beaches, cover mine fields, keep off small craft and the method of coördinating and controlling this fire; and actually determine, in-so-far as is humanly possible in peace time, by actual fleet operations and experimental practices, the what, the how and the why of a proper advanced base force.

Then, and only then, will we be able to arrive at a solution to those and hundreds of other questions which will arise. Then, and only then, will we be able to determine the organization necessary to operate and conduct such a force. Then, and only then, will the Marine Corps and the Navy realize that the organization we now have is right or wrong and we will have the data upon which to build an organization not paralleling the Army, perhaps different from our present scheme, but based on the matériel, and again I repeat, *based on the matériel*, essential to our mission and the minimum personnel to serve that matériel.

There have been five efforts to obtain data along these lines. One in 1903 at Culebra; one in 1922 at Culebra, when certain experimental work with artillery was tested; the fleet maneuvers at Culebra and Panama in 1924; and the Hawaiian maneuvers in 1925, and 1932. Five times since the Civil War. We learned a lot of lessons—so did the Navy—but shall we be satisfied in basing our plans and future war actions on lessons learned and digested by a few every seven years..

Gunnery exercises, engineering competitions, tactical and strategical exercises are undoubtedly essential and necessary to maintain fleet efficiency. Each of these activities cost money, and naval and military funds are being greatly reduced. But, I want to tell you that one of the best investments that the Navy could possibly make as an insurance for success in our next war would be to curtail expenses in some activity in order to make possible some real progress in the solution of this almost unexplored and unknown subject.

If a base is to serve ships. If a base is essential in a naval war. Then the appropriation of the cost of one cruiser, if transferred to the purpose of obtaining NOW the matériel and equipment to be employed by Marines in

defense of that base, will result in the ultimate saving of many ships for continued operations.

A thorough understanding of the principles involved in supporting a fleet in the capture of a fortified land area, and a proper preparation and application of those principles might have told a different story at Gallipoli.

Some say there will be no more war—but you and I are studying and preparing ourselves to take part in the next war.

Our Army may be reduced; our Navy, and with it, the Marine Corps, may be reduced, but whatever the strength may be, our naval authorities aim to always maintain a well balanced force.

The U. S. Naval Policy states, "To maintain a Marine Corps of such strength that it will be able adequately to support the fleet."

Our backward nations may become so forward that revolutions and disorders may become a thing out of the past. Presidential and State Department troops may have muchly reduced field of activity. War between civilized nations may become less and less probable. BUT— if war comes; if our country demands that our naval forces take decisive action in resisting invasion of our territory wherever it may be, or in taking offensive action to defend our rights and policies, then will our Navy need a force to support and aid the operations of the fleet in seizing bases for its own use or in denying geographical locations to the enemy for use as bases for their own forces.

The object of naval warfare is the destruction of the enemy fleet. To make an advance overseas, both strategy and tactics demand that we be superior to the enemy and able to concentrate our superiority at the critical or vital points when and where necessary. No one weapon, no one element of our forces is able or capable, by its own effort, of accomplishing that destruction. Whatever may be the basic arm, whether it be infantry for the land forces or battleships for naval forces, such basic arm requires the assistance and coöperation of other elements. To maintain our superiority nothing is more essential than a fleet base and an advanced base force therefore becomes one of these essential elements.

With the development of the fleet should go the development of all that make the fleet an efficient instrument in war. A program for the development and defense of advanced bases must go forward with the increased efficiency of the fleet or our fleet may fail to function in an emergency.

Such a force is our Marine Corps and it behooves every thinking naval officer, especially those who will, in the not far distant future assume high command and staff duties, to insist that the efficiency of the fleet be maintained and well balanced by the maintenance of a Marine Corps sufficient in strength, equipment and matériel to furnish on M Day an adequate Fleet Marine Force equal to the need of the fleet, and it behooves every thinking Marine officer to apply his mind, his energy, his talent and his professional ability to the solution of those problems which are peculiar to the Marine Corps in order that we, and the Navy, may know our powers and limitations before the emergency arises and, when called, produce means, matériel and men who know how to accomplish our job.

A NAVAL EXPEDITION INVOLVING THE LANDING OF A MARINE EXPEDITIONARY FORCE

PART TWO

The Naval Preparation.

It has been pointed out that the Marine Corps has two missions involving the operations of an expeditionary force.

Emphasis was laid on the facts that the Marine Corps has a mission vital to the successful operation of the fleet in war; that the naval officer, as well as the marine officer, should understand the powers and limitations of the Marine Corps; that the power of the Marine Corps to accomplish its mission depends greatly upon the possession of adequate matériel and equipment; that the Marine Corps organization should be very flexible and easily adapted to meet sudden and unusual emergencies; that the Marine Corps must be ready and prepared to operate under either of these missions up to the limit of its powers; and that we must know our job.

It is my purpose to present some of the problems involved in the preparation, planning and execution of the expedition involving the landing of Marines under the two missions referred to.

In considering these two missions, we must remember that in seizing an advanced fleet base, the primary consideration is a naval one. If it is an excellent harbor and meets the requirements of the fleet, then the considerations effecting landing operations, even though unfavorable to land operations, must be relegated to the background and our task must be accomplished irrespective of those unfavorable conditions. Here is an operation which must succeed or fail. There is no halfway measure—no stalemate. We must accomplish our mission or withdraw. No base, half secured, can be made a refuge for a fleet. A beachhead with insufficient depth, is no beachhead—we merely have our feet on land, but no place to put our head.

The immediate objective of the Fleet Marine Force may be determined by a naval war plan, a plan of campaign, the decision of the Commander in Chief of the Fleet, or by an administration policy announced to and carried out by the naval commander of a Special Force.

On the other hand, in emergencies not involving war, the primary consideration may not be naval, thereby permitting more latitude in the selection of landing places and the operating area for land operations.

In case war with a major power is imminent, we assume that by Executive Order, the Marine Corps has been recruited up to its authorized strength of 27,400; that the Marine Corps Reserve with its 10,000 officers and men, although yet not inducted, are prepared and ready for immediate mobilization; that at Quantico, a marine brigade and certain special troops are already organized; and that the nucleus of a Marine Force is being assembled and ready to mobilize the Force at Quantico or San Diego, depending upon the theatre of operations, as soon as mobilization is ordered. That's what we will have to do. Are we ready? Can we get away with it?

War plans are prepared with meticulous care and cover a vast amount of detail, but these plans, locked up in the archives of the Department or high command, tho they may be safe and secret, do little to make the solvers more familiar with their problems.

General Hamilton, when referring to the lack of plans regarding Gallipoli, says he never heard of the existence of the General Staff study of the Dardanelles made in 1906, "until I had been back some months, when the whole of our troops had been evacuated."

Plans must provide for certain contingencies and accidents, but we cannot foresee all the events which might occur to disrupt our plan. We want a flexible plan, but if too flexible, it means that at the last moment we have failed to provide for important essentials. If our plan is too rigid, and our assumptions turn out to be in error, we cannot then change our whole plan, but must make such minor changes as time permits and go on with the original plan. At the same time, we cannot afford to prepare a plan, the success of which depends upon any one thing. Operations of this nature are too uncertain—a lost unit, a sunken transport, might cause failure to the whole operation.

If we knew our objective, had accurate and detailed charts and topographical maps of the area, had reliable information of the strength and location of the naval and military forces which might oppose us, we could prepare our plans and have a reasonable expectation that we could execute them as planned. But unfortunately, many factors intervene between departure and actual landing which make such a plan unlikely in a war against a first class power, tho quite possible against a non-maritime and poorly organized military country. Therefore, we must have not one, but several plans.

In preparing the naval plans for this expedition, there is a certain amount of doctrine which is a part of naval training, and which often permits the omission in part, of detailed plans which might be mandatory for troops in land operations. Certain types of vessels perform certain tasks and, when such vessels are assigned to a force, doctrine covers a great part of the plan. The WHAT and WHERE to do a thing may be told and the HOW is already worked out. For example: Mine Sweepers—sweep for mines; Mine layers—lay mines; the method of how does not take long and detailed planning. The Navy has various methods of sweeping or laying mines; they select one of those methods, and the HOW is decided. For this reason, the operations of the individual units of a naval force to escort and support a landing does not necessarily need to be planned long in advance. The expedition is decided on. Certain types of vessels are deemed necessary. Doctrine, to a large degree, controls their use. But the coöperation and organization of that force as a whole should be determined as early as practicable after the decision is made to embark on this expedition, in order that the tactical plan of the land forces may be prepared with the knowledge of the nature and amount of naval support.

To insure coöperation we cannot wait until the ships arrive in vicinity of the landing place before we make and promulgate our plans. A Commander in Chief should not assign a group of ships to escort, transport and support a landing, and expect these ships, without previous planning, to successfully execute their mission.

Let me quote from the critique of the 1924 Panama and Culebra maneuvers. Admiral Coontz, the Commander in Chief, said:

"The problem demonstrated the need for study, conferences and rehearsals to insure efficient coöperation, and for study and exercises in making landings."

General E. K. Cole, said:

"I had given it a great deal of thought, but had not formed anything like an adequate conception of the combined effects of wind, sea, darkness, and of break-downs, where repairs were difficult, if not impossible, on a flotilla of small boats."

Captain Ridley McLean, said:

"Never before realized the obligations placed on naval officers for expeditions of this character. For practically every officer in the Navy, this is an unknown land and one which requires much thought and preparation and actual experience. Few officers realize the obligations which Navy Regulations impose upon them for expeditions of this character."

This is strictly a naval operation until the troops have been actually landed on the beach, and the responsibility up to that point rests with the Navy. Therefore, the composition and organization of the force as a whole should be determined as early as practicable after the decision is made to embark on the expedition, in order that the tactical plan of the land forces may be prepared with full knowledge of the nature and amount of naval support.

Let me mention some of the plans that must be prepared by the naval force prior to the landing:—

1. Composition and organization of forces.
2. Preparation, collection and distribution of special equipment and matériel.
3. Allocation of transports and cargo vessels to loading ports.
4. Loading plan.
5. Embarkation plan.
6. Liaison between Naval and Marine Corps staffs.
7. Selection of operating area.
8. Route embarkation points to debarkation points, with rendezvous of transports, if any.
9. Intelligence plan. Naval and Marine intelligence section must coöperate in the preparation of their respective reports before they are promulgated, as much information usually contained only in military intelligence reports will be of great importance to the naval commanders. Preparation of maps and charts.
10. Use of secondary base, if available, and necessary.
11. Rendezvous off landing place.
12. Selection of debarkation area with a subdivision of this area into transport, train and support areas to support the tactical plan of the landing force and the methods and formation of approach thereto.
13. Attack and defense against enemy surface vessels, submarines and air.
14. Execution of the landing—including means of landing; boat plan; officer in charge of the landing; order of landing; formation and advance to the beach; boat traffic between ships and ship to shore and return; disposition of transports and train vessels after troops and material have been disembarked.
15. Naval support to the landing—including preliminary reconnaissance; mine sweeping; mine laying; air plan in reconnaissance, attack and defense; submarine plan in reconnaissance and attack; gunfire—preliminary and support-

- ing, close-in, distant and flank; smoke; communication plan; organization of the beach and landing place by beachmaster
16. Supply plan—for immediate use—water, ammunition, and food: for use as soon as practicable—heavy equipment, matériel and supplies to sustain the contemplated operations.
 17. Evacuation and hospitalization of sick and wounded.

The Landing Place.

A landing force at sea is on its *line of maneuver* and as it maneuvers, fights, feints, demonstrates, and mystifies the enemy while on that line of maneuver, so will it effect the final *line of operations* at the decisive landing.

The basic idea of the defense is to deny access where the enemy can land and quickly establish himself, and to observe those difficult places where he might land, but may be thrown out by counter-attack before he can establish himself.

We must remember that while initially, that is, prior to landing, the attacker has the advantage of mobility and selection of point of attack, as soon as the attacker has landed, he has tied himself down to a definite area which, if known to the defender will change the situation and give to the defender the advantage of mobility and power of concentration of his forces against the point of attack. The defense has prepared for this emergency. His plans have been based on a rapid movement of his forces to any area; once it has been determined as the main enemy landing. His communication net, his roads and trails have all been constructed and laid out with that end in view. Formerly, he was waiting the attackers move. He was in the dark as to where the blow would fall. Now, he knows, and while the attacker is struggling forward into an unknown area, over unknown terrain, opposed by groups of unknown strength and size, with units mixed and scattered into small groups, seeking such protection as the terrain affords, the defenders' plans should work according to plan. Every defending group knows where to go, how to get there, and what to do when they get there. They know the powers of their supporting artillery and whether shells will or will not cover a certain area. Ranges have been accurately determined and ravines, roads and all avenues of approach have been marked for a devastating fire.

Some of the obstacles which must be overcome or eliminated before a landing may be made against organized resistance are:

1. Heavy artillery fire, HE and shrapnel, a long distance from the beach.
2. Bombing and machine-gun fire from planes, a long distance from the beach.
3. Light artillery fire, 6000 or 7000 yards from the beach.
4. 37^{mm} and machine-gun fire a mile or so from the beach.
5. Murderous fire from machine guns, automatic rifles and rifles, when stopped by wire just off the beach.
6. Controlled and contact mines, off and close in to the beach.
7. Rough sea—making landing difficult and hazardous.
8. Sudden squalls or very rough sea preventing supporting troops from landing and making it impossible for initial waves to maintain themselves on the beach.
9. Difficulty in consolidating your initial hold just in from the beach.

10. Serious losses enroute to the beach and a break-up in tactical units forcing you to establish your landing with greatly weakened forces.
11. Encumbrance of wounded in boats.
12. First wave boats get lost and land at wrong beaches making congestion at some beaches and no troops at others.
13. Mixing of tactical units on the beach. This is most difficult to avoid and effects command and advance.
14. No opposition at some beaches. Calls for initiative, and bold and prompt action.
15. Landing boats may ground well off the beach with water too deep to wade ashore.
16. Enemy submarine activity may force movement of transports and supporting ships and thereby materially effect the arrival of supports and reserves and naval gun-fire support.

General Hamilton, in speaking of the Gallipoli landing, says:

"The problem as it presented itself to us was how to get ashore. The dangers and difficulties alive before our eyes were: (1) how to avoid being slaughtered in our boats and on the beaches; (2) how to get food, drink, and ammunition as we went on."

Again, he says:

"Staff officers who have had only to do with land operations would be surprised, I am sure, at the amount of organized thinking and improvisation demanded by landing operations. . . . The diagrams of ships and transports; the list of tows; the action of destroyers; tugs, lighters, signal arrangements for combined operations; these are unfamiliar subjects and need very careful fitting in."

In selecting a landing place we must consider our objective, the enemy, the terrain and the sea area.

Our objective. What is it? A harbor; a bridgehead; invasion and occupation of territory; a feint; a demonstration; a denial of territory to the enemy; a specific area which may be seized only by landing near the objective, or may a landing at any point in the area suffice?

An area especially desirable for land operations may be entirely impracticable from the naval viewpoint. Here we see our basic considerations effecting the selection of a landing place are very different from a joint Army and Navy landing, where the Army objective may require an area permitting operations a long distance inland from the beach.

Naval forces do not operate inland—that is the Army theatre. But naval forces do require a water area, almost surrounded by land, from which they may operate their forces, and a land area on which they may maintain the installations essential to the operating fleet.

So our objective is generally a limited one and the amount of territory to be controlled by our land forces is, as a rule, only that necessary to seize, defend and hold the base area securely, and our decision involves not only the ability to land at one or more points but landing at such points as will give the troops the best chance of accomplishing their task.

Our enemy. A thorough consideration of his organization, equipment, matériel, armament, strength, morale, training, support available, disposition of forces, supply, the commander and his mission must be made however inaccurate our information may be.

We do not generally know the strength and disposition of the enemy and one of our greatest problems is to avoid overestimating and underestimating his offensive and defensive power. He is probably as afraid of and worried about us as we are of him. He knows his weak points and that we are looking for them. If we assume that he is thoroughly organized, prepared and ready at all points to receive and deny our advance, then we had better go home or assemble a superiority which will succeed regardless of the number of casualties.

General Hamilton committed both of these errors. He over-estimated when he waited for his 29th Division (orders from Kitchener) and sent his transports, already off Gallipoli, to Alexandria to be re-loaded. These transports carried 34,000 men and 40 guns, and, had he landed them in spite of the poorly loaded ships, he might, with the support of naval forces then available, have over-run the Turkish opposition.

Hamilton urged Admiral de Robeck to keep bombing the forts. General Birdwood urged Hamilton to land with what he had. The Turks had two regiments and nine batteries thinly strung out on the southern end of the Peninsula; three regiments and three batteries not yet completely organized and in reserve at Maidos; and no other immediate support except one regiment across the strait at Chanak. A total of 12,000 widely separated Turks. The Turk defenses were not yet organized, but Hamilton did not know it. That he had a hunch, is evident by his diary of 22 March, when he writes:—"We might tomorrow night sup in Achi-Baba. With luck we really might." When he did attack on 25 April, he had an effective strength of 2840 officers, 72,646 men, and 150 guns. He under-estimated when he misguessed the defensive fighting power of the Turks.

The generally accepted doctrine in American Naval or Military action is to assume the offensive, and yet, in our military and naval schools, in our fleet or land exercises, in our discussions of warfare, we are constantly referring to the question—how can we defend ourselves against this or that.

Every weapon of offense has produced a counter weapon of defense. The air men may say they can bomb an enemy into submission. If that be true, then Colonel Fuller, in his "Reformation of War," may be correct when he says an army needs only air, tanks and gas.

But we have air as well as the enemy and tho we must consider the power of offense and defense we must not spend too much time on thinking of what he may do to us, at the expense of planning or preparing to DO things, to him.

The Terrain.

The most successful landings in history have been made at places where the defenders considered physical obstacles made such a landing improbable or impossible.

I will merely mention a few terrain factors which are of great importance to our landing.

Bearing in mind our objective, we must consider:—

1. Possibility of enemy organizing the area for strong defense.
2. The number of landing beaches available.
3. Configuration of the beach, open or concave, within a bay or harbor, or convex, as at point of peninsula. Does it permit flanking fire from covering ships and landing on a broad front?

4. Nature of the beach. Is it—
 - a. Free from rocks, mud flats, etc?
 - b. Sufficiently steep to permit beaching of boats?
 - c. Firm to permit landing and movement of heavy equipment and matériel. Not soft, deep sand or mud?
 - d. Sheltered to afford protection from surf?
 - e. How many beaches are available?
5. Nature of the immediate hinterland.
 - a. Is it favorable for strong defense?
 - b. Can enemy supports and reserves readily and promptly concentrate at this point?
 - c. What will be the probable effect and damage from our naval gunfire?
 - d. Has the enemy good observation?
 - e. What observation is available to us, before and after landing?
 - f. Does it permit a rapid deployment and advance toward our immediate objective—a beachhead?
 - g. Will it permit an advance from beachhead to ultimate objective?
6. Nature of hinterland back from the beach and enroute to our objective.
 - a. What effect and damage will our naval gun-fire have on his support, reserve positions, his troop concentration, his communications, his rear defenses, his supply problem?
 - b. How many routes of advance are possible? Is it limited to one only and may that be defended successfully by a small force?
 - c. Does it permit the establishment of a landing field for our planes?
 - d. Does the road net facilitate our advance and concentration of our landed troops, at threatened points?
 - e. Water supply. Must we transport all of our water from ships to shore or is there an available supply in area?

The sea area. Certain conditions are as effective today, in their influence on landings, as they were a hundred or a thousand years ago. Dangers on an exposed coast; wind and weather; surf, still a great protector to the defender and a disadvantage to the attacker; continuous or even initial landing cannot be guaranteed from hour to hour; gales a long distance off; squalls; strong currents; changes in tide; all affect, interrupt, disorganize, and may stop a landing force in its advance to the beach. And yet, all exposed beaches are considered potential landing places.

Examples of rough surf and sea delaying landing or cutting off communication between ships and shore; Louisburg, 1758, 5 days; Aboukir, 1800, 6 days; Algiers (Fr.), 1830, 20 days; Crimea, 1854, 2 days.

What we would like to have would be a good anchorage in smooth water; of sufficient area to permit maneuver of transports and supporting ships; comparatively shallow to reduce submarine menace, yet with sufficient depth close in to allow transports to get as close to the beach as enemy fire will permit and at the same time, allow supporting ships to approach within gun-range of their land targets; a nearby island for use as a temporary base, especially for landing field; and a location with respect to the objective that it may permit of a feint, demonstration or secondary landing at points other than the decisive landing.

And here, let me point out that this secondary landing or demonstration should not be a blow in the air with only a possible advantage. It should be tied in to the general plan. It is easy to make too wide a dispersion of forces and leave insufficient strength to take advantage of success gained by the general plan. We must have a strong reserve and Gallipoli furnished an excellent example of dispersion of forces and lack of reserves.

How are we going to get this information about our objective, enemy, terrain and sea area? Excellent maps, excellent information and an excellent plan may permit a surprise landing without reconnaissance. Poor maps, little or no peace time information, little knowledge of enemy dispositions, no accurate knowledge of enemy terrain, will demand a preliminary reconnaissance, the extent and nature of which will be in inverse ratio to the amount of knowledge on hand.

Information regarding areas of possible naval use as bases cannot be too detailed, too exact or too up to date. Tactical plans may succeed or fail due to the possession or lack of correct and adequate information. It might seem of no importance to an officer visiting a foreign port, bay or harbor to report that the beach was of soft sand or muddy, but such information might be of great importance to the commander who contemplated a landing in that area.

Air reconnaissance should be supplemented by reconnaissance by submarine and both reports compared. *e.g.* An observer reports surf across the mouth of a river. Air view shows it is on a bar that makes an angle and leaves clear water around one end. Submarine view shows the banks lined with overhanging bush and mosquito which would make landing difficult, if not impossible—a fact not indicated by air report.

The harbor, our objective, may be strongly defended but unless the area is a small island, the enemy will not be able to strongly defend *all* landing places. It is one or more of these undefended places that we must locate, effect a landing and advance on to our objective.

We must, by every possible means, be sure to land the troops at the place and beach designated. One beach may appear to be as good as another but the troop commanders tactical plan is based on operating certain troops from certain beaches, and a monkey wrench is thrown in to the plan if troops are landed elsewhere. Witness the landings at Gabe Tepe and Sulva Bay.

I have briefly presented the selection of a landing place, the defense which may be prepared and the reception committee which we may expect to meet on our trip to and our arrival at the beach. It looks somewhat hopeless and I think you will agree that to make a successful landing we must:

1. Land where there is no resistance.
- or 2. Land where resistance is unorganized and hastily assembled.
- or 3. Land where defense is in observation only and not in strength.
- or 4. So improve our naval gun-fire support that it may, by preliminary bombardment and supporting concentrations, demoralize and weaken the defender to such an extent that a landing may be made against a defended area without such great losses as will prevent our gaining and extending a beach head prior to the concentration of superior forces against us.

The attackers supporting group with its gunfire and combat and bombing aviation must break-up the enemy concentration, must silence

that enemy fire, or they will find themselves defeated before they really get started.

Boiled down still further, we may contend that there are only two ways, under our present system, of making this successful landing—

1. Land where there is no enemy.
2. Have a sufficient superiority in troops and matériel that you can force your way in regardless of losses and still be superior in personnel and matériel.

Before leaving the landing place, let me impress upon you two very important differences between a naval landing and a joint Army and Navy landing—namely, command and purpose.

A naval landing presents a unity of command that cannot even be approximated in a joint expedition, as in the latter we do not know what kind of a command we will have.

As to the purpose, a landing area selected by the Army generally demands many specifications not required by an advanced base force. Large forces. Landing on a broad front. Maneuver room for large forces. Great depth to permit movement inland. Strategical plan is often based on operations and objective inland and away from the beach. Landing place is selected with a view to these future operations, frequently a great distance from the initial landing. Landings may be made simultaneously at widely separated places and still converge on and reach their common objective. Tremendous amount of supplies and impedimenta is essential to maintain this large force and all must be landed. A long line of communication requires a large overhead in personnel and matériel. The Army, when it advances inland must furnish its own support and establish its own advance supply bases.

The Execution of the Landing.

The Marine Commander prepares a tactical plan and executes his part of it. The Naval Commander prepares a supporting plan which involves the initial execution of the tactical plan and the support of the landing forces to the end of the action.

Corbett refers to landing operations as "the most difficult and the least appreciated form of operation." Why is it the least understood? It is because we devote our attention to other phases of training that we consider of more importance, and yet, our geographical situation demands that should we ever make war or have war forced upon us, we *must* understand this form of operation, first, that we may take the war to our enemy, and second, that familiarity with the methods used in the attack will permit us to successfully defend our own shores.

And who should be better prepared or more familiar with this form of operation than that composite force represented in the Navy and it's Marine Corps? The drill ground is ready. The forces are available. Does it ever occur to you that someday we may have to seize a defended base; that someday we may have to take an army of hundreds of thousands of men overseas; and that the Navy will have to do it? Then let us visit this laboratory, this drill ground, more frequently than the missionary takes his sabbatical leave.

Chance—luck—have played important parts in many campaigns, in many battles. Nelson, in his famous Trafalgar memorandum noted that "something must be left to chance", but Napoleon added "he who studies the causes of their success is astonished to find that they took every possible step to win it."

In the execution of a landing, those who have given it little thought will be astonished at the number of steps that must be taken to win it. From the conception of the idea to the delivery of the landing force on the beach, it will require the best talent of command and staff that a military and naval organization can produce. Everything must be planned. Every plan must have a schedule. Every schedule must be fitted in to one or more other schedules. Everything must click perfectly.

It is a relay race with the C-in-C on his flagship and the commander of the enemy shore forces each holding the watch while their forces race toward a lonely stretch of beach. The one who "gets there fustest with the mostest men" will be the winner at that goal—but there is another goal, the beachhead, the possession of which is essential before the dash can be made to the final goal. Each side is pouring in men and ammunition toward this decisive area. The landing forces' supports and reserves come from the ships, land and pass on thru to extend their gains. The shore forces gravitate from all directions as if drawn by a magnet, hoping to arrive in time to exert their strength in counter-attacks which will decide them the winner.

How do we get our forces ashore?

Transports arrive at the debarkation point. We have the task of putting these troops ashore in accordance with a preconceived tactical plan which provides that when the troops are on the beach their movements shall be confined to certain zones of advance leading to or converging on a common objective, or, diverging toward special objectives.

Debarkation Area.

By Debarkation Area, we mean the sea area in which the transports or other ships stop to disembark their troops. Its distance from the landing beach is governed by the configuration of the adjacent shore line, the depth of water and the enemy gunfire. It should be an area distinct from the supporting area; should permit anchoring in less than ten fathoms as submarine protection; should permit maneuver room for transports to avoid enemy heavy artillery fire; should permit of mine sweepers sweeping a channel permitting several lanes of approach to the landing beach; should be as close to the beach as conditions permit.

In land operations in an attack against an organized defense we see troops moved into position under cover of darkness; artillery is disposed of in depth to facilitate the different artillery missions; tanks, cavalry, air, all auxilliary troops are placed in their proper positions relative to the whole attack, and *zones of advance* are specifically designated for each attacking unit. This zone of advance begins at the rear of each unit and its boundary limits are extended right on thru the enemy lines to include the objective and its exploitation, if a limited objective, and to a reasonable advance, if unlimited, when the attack is continued by fresh troops from the rear. Each zone has its area of advance and the support given to or received by adjacent zones, very clearly defined.

Let us imagine a group of combatant ships and transports all anchored under cover of darkness in a common group, all disembarking their troops and attempting to dispatch and transport these troops to various and separate landing beaches. We would have a mess that the most expert of experts would be unable to disentangle. Everyone would be wondering—where do we go from here.

To avoid this congestion and hopeless situation; to assure a single-

ness of purpose; to control the advance of the troops and the support to be rendered during and after their advance; we must extend the lines, designating and limiting the zones of troops advance, to the rear and thereby divide our sea area into zones which will indicate the area to be occupied by certain transports carrying troops designated for that particular zone of advance in the tactical plan, and the combatant vessels which are specifically designated to support their landing. These lines are not necessarily in prolongation.

Once ashore, the support given to or received by adjacent zones is clearly defined. Coöperation between zones is dictated in orders from higher command; is arranged by conference between unit commanders involved; or by both methods. We see here a clean, clear-cut allocation of units to accomplish certain tasks; these tasks clearly defined; and a higher control of supports and reserves (and by that I mean fire-power as well as man-power) to reinforce and support when and where support is needed.

This same clear-cut allocation of tasks and mutual supporting arrangement must be extended clear back to the last ship involved in the execution and support of the landing.

We noted, in a land attack, that heavy artillery and reserves were located in rear of the assault and immediate attacking troops for the purpose of utilizing this artillery fire in certain specific fire missions and in general support, and, to permit the reserves being used where and when the situation demanded.

We also noted the methods of coöperation and coördination of effort of adjacent zones of advance.

In our sea area, we have ships assigned missions similar to that of the heavy artillery, ships carrying troops to function as supports and reserves, and adjacent zones must assist each other by gunfire.

We know the tactical plan, the main point of attack, the number and type of supporting ships and the enemy surface ships in the area.

We have estimated the enemy strength at the point of landing, his artillery, air, mining operations and submarines.

We select a debarkation point as close to the beach as possible but enemy artillery may force us to keep out as far as 20,000 yards, and that is a long haul to arrive at the beach just before daylight. Night visibility for land artillery is limited to 20,000 yards and then only when target is illuminated by star shell or flare. N.W.C. Rules state that beyond 15,000 yards target is not visible.

We now have the problems of

1. Sweeping the area to be occupied by our transports, train and supporting vessels, and channels for the advance toward the landing beaches.
2. Getting the supporting ships into position.
3. Getting the transports and train vessels into position.
4. Getting the troops into the landing boats.
5. Getting off the preliminary bombardment.
6. Getting the troops to the beaches.
7. Furnishing supporting fire.

Sweeping.

We must sweep under cover of darkness in order to prevent defense artillery from easily picking off our sweepers and we must clear an area in each support sector sufficiently large to permit the safe arrival and maneuver in and out for our transports and supporting ships. Land

searchlights cannot pick up a target beyond 8,000 yards. Should it be intended to actually beach designated transports and land troops direct from such transports, then sweeping operations would have to go forward to that particular beach.

Secrecy and surprise are excellent weapons in the hands of the attacker, but in operations of this nature, we play these factors to the utmost of their effectiveness up to the moment our mine sweepers initiate their sweep or until we commence our air reconnaissance, and from then on, we must rely on speed and accuracy in the execution of our landing and tactical plan to take advantage of any surprise we may have put over on the defender.

When the mine sweepers have completed their sweeping and dumped their accumulated mines, they should go alongside transports and assist in the debarkation of troops, towing of boats and barges, and transporting troops and matériel to the beach.

A situation might exist where destroyers, tugs, and mine sweepers could, under cover of darkness, take the initial troops right to the beach. Secrecy and surprise, together with accurate and reliable information of enemy strength and disposition, might make such a movement possible.

Sweeping may have to be done on the night previous to our landing, as the size of the area to be swept and the distance from the disembarkation point to the beach may be so great as to preclude an attempt to land under one period of darkness. Such action would be giving a twenty-four hour notice to the enemy. However, if we had sufficient sweepers to initiate sweeping in several areas, it might confuse the enemy and react in our favor.

Preparation for the actual landing.

Battleships, aircraft carriers, heavy cruisers, light cruisers, destroyers, submarines, transports, cargo vessels, oil tankers, hospital ships, mine sweepers, tugs, beetle boats, motor-sailers, speed boats, all have to be put in their assigned position at the proper time, on a schedule that is working against time, for the zero hour, when the troops strike their respective beaches, must be *not later* than the first peep of dawn. And this must be done in the dark, noiselessly, and without confusion.

The anchorage plan provides for a certain combatant ship to be in a specified area, in order to utilize its gunfire on targets and at ranges previously determined. This position must also bear an accurate relation to other ships to prevent interference with that gunfire.

Every ship must know the location of every other ship. Destroyers, tugs, motor sailers, and landing boats are directed to go to certain transports for certain troops and equipment and then form in line or column so many yards inshore of certain other ships.

Mine sweepers must lay lighted buoys or gas buoys to indicate the swept channel, to enable ships to pick up their berths, and to enable firing ships to find their firing positions. Submarines may be able to locate their own position accurately just before dark and plant buoys to be used as range marks and aiming points. In any case, some method must provide for accurate navigational aids.

Firing ships. These ships advance into a swept area sufficient in breadth and depth to permit free maneuver and just beyond the arc of enemy known gun-range. They precede the transports in order to afford them protection, and to act as "guide posts" for the transports anchorage and for the line of "Tows" to be formed later. We may assume, with

the present 155^m gun range, that this line of firing ships would be about 18,000 yards from the landing beaches with each ship in its own particular support sector.

Transports. Transports follow, proceed to their designated berths and anchor in line 500 yards in rear of the firing ships.

Troops are distributed on transports by tactical units and, if possible, in accordance with a tactical plan. Any redistribution of troops, and there are many reasons why a redistribution might be necessary, must be made prior to arrival at the debarkation point.

Several things may occur to make redistribution of troops desirable.

1. Long sea trip may reduce the effectiveness of certain units.
2. Changes in tactical plan may require a new assignment to part of the troops on one or more transports.
3. Feints or demonstrations not initially contemplated may require the transfer of certain troops to combat or other vessels.
4. A reduction of the number of transports in the transport area might be advisable and accomplished by a concentration of troops on fewer transports.
5. In order to effect a landing it might be necessary to place the entire initial landing waves on heavy combat vessels.
6. The loss of certain transports due to submarine or air attack.
7. The absence of certain transports due to breakdown or other cause.

A redistribution will call for a change in plans and *all concerned* must have accurate information of the changes made and sufficient time to inform their subordinates and make and promulgate their own changes, if any.

Destroyers and tugs assigned to transport or tow troops to landing beaches will proceed to their designated transports and go alongside as soon as the transport anchors. Troops for any single boat group should be on the same transport. If any one destroyer or tug handles two sub waves, both sub-waves must come from the same transport. No destroyer or tug must be required to go from one transport to another to procure its load or tow.

Train vessels. These ships have equipment and supplies that will be needed later, but we are primarily concerned with getting the additional landing boats carried by them into the water and enroute to their designated transports. These ships anchor in line about 500 or 1000 yards outboard of the transports and deliver their boats as soon as they anchor.

Plane carriers. Aircraft carriers should be placed where they may be easily located and so they may be approached from the leeward by planes flying low. The leeward flank of the formation or in rear, best meets this requirement.

Submarines. Should make a close reconnaissance of the beaches, if practicable. This might be done several days before D day and men actually landed to make a personal reconnaissance. During the advance to the beach, submarines should be stationed on the flanks as guide posts and to assist by gunfire.

Disembarking troops into landing boats and the advance to the beach.

We now have our force headed for the disembarkation point. Mine sweepers; destroyers and submarine scouting, observing, guarding; light supporting ships; heavy supporting ships; transports; and cargo vessels; each with its own special task to be performed according to plan in order to get the troops from the ships to the landing beaches. (Photo No. 1 and 2.)

Transports and cargo vessels not landing troops or matériel remain outside of shore gun-range.

It is pitch dark. No lights. Platoon commanders have assembled their troops ready to embark by gangways, over the side, thru cargo ports, by any method that is rapid, safe and quiet. Landing boats have been lowered from cargo vessels 1, 2, 3, *etc.*, and directed to report to transports 1, 2, 3, *etc.*, at a specified time. Landing boats from transports have been lowered and are lying off waiting to come alongside. Boat schedule must consider that certain type boats are not suited to carry certain units and equipment and that certain equipment can be transported only in certain type boats. Landing boats come alongside and troops embark. Boats shove-off and join a group of similar boats at a designated rendezvous.

As the supporting ships arrive at their positions in their assigned sectors they may open fire on their assigned land areas or they may withhold their fire until a later phase. This will depend primarily upon the amount of fire required to beat down the defenders beach defense and the enemy activity at the time. If the enemy does not fire on us at this time it might be very wise to withhold our fire until all troops are disembarked, as a vulnerable time for the attacker is when the transports are stopped and troops embarking in small boats. An air attack at this time might cause very serious losses, as would also a well directed fire from land batteries. A very careful calculation of the time required to unload troops and matériel must be made so that ships will remain in submarine or gunfire areas the shortest possible time and boats hit the beach on schedule.

Means of landing.

What type boat shall we use?

Our present 50' motor sailer has a capacity of 30,270 lbs.; space for matériel 22' x 9.5'; holds 85 men fully equipped (theory 190).

Our 40' motor sailers' capacity is 14,700 lbs.; space 14' x 8'; holds 59 men equipped (theory 90).

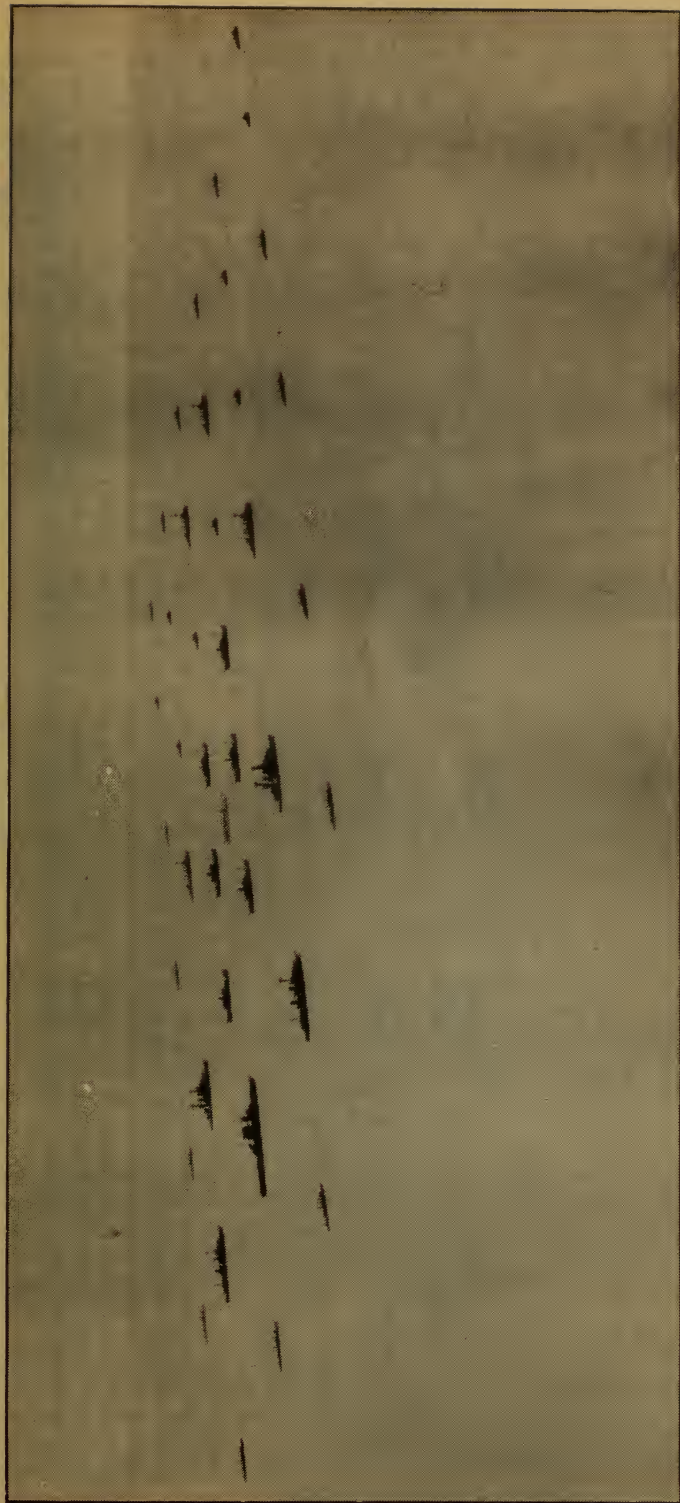
A 155^{mm} gun weighs 15 tons and the tractor 10 tons.

Loading matériel and equipment is, mechanically, more difficult than loading troops. Our present ships' boats are deep and require more men, greater effort, longer time to lift the matériel out (and probably, while under fire) than would be required on a flat decked boat.

You cannot improvise boats at the last moment. They must be ready and go with the expedition. If we have special troop and artillery barges, we cannot expect to put on each transport a sufficient number of these boats to land *all* that transports troops. They would take up too much deck space needed for troops. Each transport should, however, carry enough boats to embark at least one-third, and more if possible, of her troops, and artillery barges for artillery, if on the transport. The remaining number of boats needed should be carried in the train vessels, to be launched when needed. We should not obtain our boats from the support group.

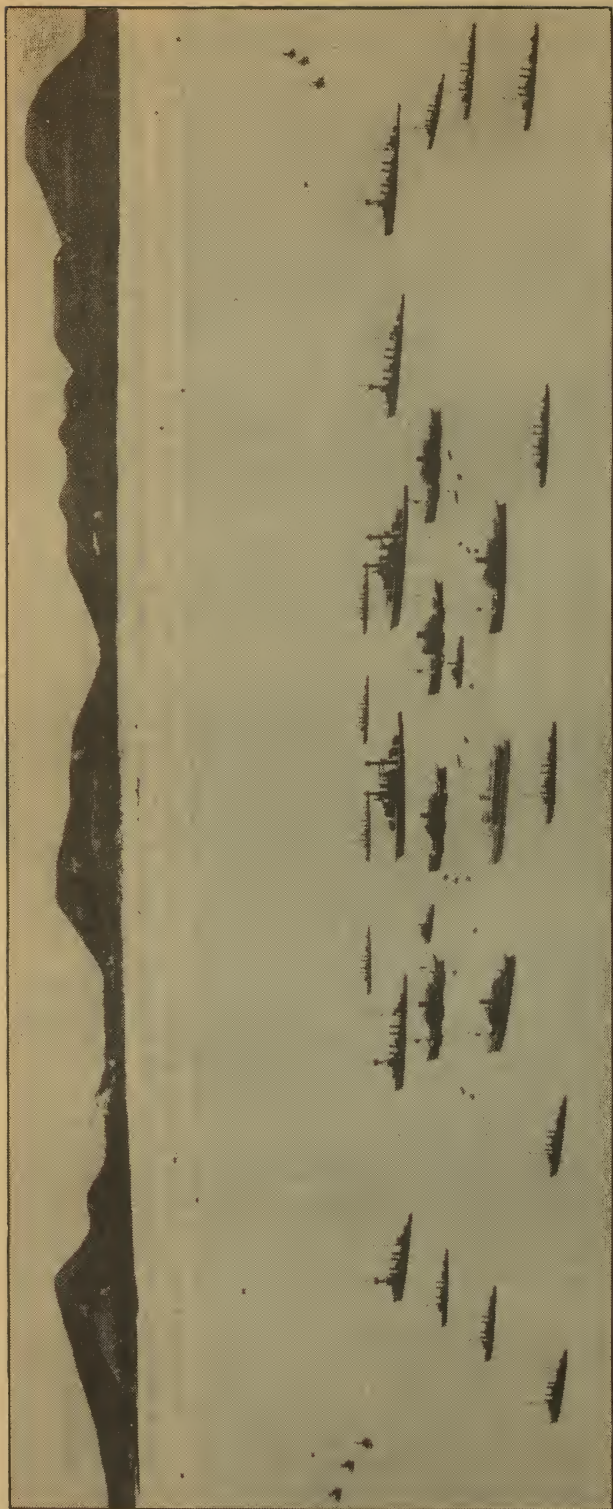
Our present equipment cannot tow and is unsuited for surf work. This must be overcome, in that we must provide power boats capable of towing, and boats which can get to the beach thru a surf and land on poor beaches without being smashed up. Remember that even self-propelled boats break-down and may need a tow—and we want no troop-boats drifting at the mercy of the sea and enemy fire.

These boats are manned by a navy crew; should have protection against small-arm fire and shrapnel; should be able to mount a one-



The Attack Force steaming in night cruising formation toward the Debarkation Area. This disposition must insure maximum protection for the capital ships and train commensurate with the proper alignment of vessels for subsequent operations after arrival at the Debarkation Area. Thus the mine sweepers are not only augmenting the screens, but are in position to proceed with mine sweeping operations when necessary without interfering with other units of the formation. Also the disposition of the carrier group is such as to enable it conveniently to leave the formation when desirable.

Photograph No. 1



All units of the Attack Force have arrived at the Debarkation Area. Landing boats have been lowered and are proceeding to their respective positions alongside the transports for loading. Groups of mine sweepers on the flanks are returning to the Debarkation Area, having completed minesweeping operations and laid automatic gas buoys to mark the firing areas. In the distance is a submarine marking the center of the line of departure and showing a screened light to seaward. Four destroyers are disposed to landward of the line of combatant supporting ships, awaiting the arrival of landing boats which they will tow to a position within 4000 yards of the beach. They will also deliver beach fire and act as accompanying ships in close-in flank positions. Two battleships and four light cruisers comprise the off-shore supporting groups. They are disposed on a line 18,000 yards from the beach and are in position to protect the Debarkation Area against attack by aircraft prior to the ship-to-shore movement. The transports and cargo vessels are outside effective shore battery range. Around them destroyers are disposed in an antisubmarine screen.

pounder or machine gun; should be able to carry a heavy cargo with light draft; and must be thoroughly seaworthy.

Each boat carries a naval officer in addition to the crew, and the boat equipment must be carefully listed and checked to see that nothing is omitted—water, cooked and emergency rations, flashlights for signalling, dim blue light to show in one direction only, crew to be experienced seamen and good swimmers—all this and more, is important.

Shall the boats be large or small?

Let us assume 1000 men landing on a 1000-yard beach and consider the advantages and disadvantages of large and small boats.

Large boats—say 500 men each.

More men at point of landing.

Reduce number of targets to two.

Permits enemy concentrate fire on two targets.

Larger targets.

Congestion at disembarkation on beach.

Entire 1000-yard front not covered and some men have several hundred yards to go to flank to get to their advance position.

Enemy resistance may be concentrated against two points of landing.

Landing, once effected, has more punch at point of landing.

Better protection against rifle, machine gun and shrapnel.

Lands a complete tactical unit at one point and simplifies control.

Loss of loaded boat means no attack on one-half of that 1000-yard beach.

Small boats.

Smaller targets.

More targets.

Causes divergence or greater dispersion enemy fire.

Less protection against small arms and shrapnel.

Distributes attackers along the entire beach.

No man far from his advance sector when he lands.

Greater possibility some groups getting thru.

Enemy defense probably cannot concentrate a force against each boat.

Better opportunity for flanking operations.

Better opportunity to afford prompt support to a held-up unit by action of those units not stopped at the beach.

General Dunlap, who had given a great deal of thought to this question, contended it unwise to land in boats containing 150 to 500 men. He approved the small boat with 8 to 16 men, capable of landing thru a surf and equipped with motor and oars. This approximates the land attack in squad or section columns ready to deploy as skirmishers. He said such boats presented smaller and more dispersed targets, more easily clear underwater obstacles and handle better in the surf. He also said "No attack can successfully overcome the modern defense of the shore-line except in darkness, either natural or produced by smoke or gas."

This brings up the question—if you *cannot* get ashore, what difference the size of the boat? But if you do find a place where the defense is not organized, that is, where there is not strong resistance, is it better to have a tactical, fighting unit concentrated and under control, or shall we run the risk of small boats getting lost and no tactical unit when we hit the beach?

Furthermore, does this line of thought indicate that the first waves should be put ashore in small boats, say 8 to 50 men each, and the supporting waves landed in larger boats? Will larger boats of the third and fourth waves land at prearranged places or will they be directed to areas where the initial groups were successful?

The requirement is—to land the most or required number of men; in the minimum time; and to establish as extensive a bridgehead as possible or necessary, in order to protect the landing of other troops and to defend against counter-attacks.

This demands boats and many of them.

The British, at their Gaba Tepe landing, put three brigades, 12,000 men, ashore from 4:00 a.m. to noon, 8 hours. The Turks, after 8:00 a.m., always had superiority of forces against them. Had the British doubled their number of boats they would have had 12,000 men ashore by 9:00 a.m., all five brigades, 16,000 men, would have been ashore by noon; and the story might have been different. The total number of boats available landed 1500 men per trip. At Helles, they landed 5500 men per trip plus the 2000 on the River Clyde. At Kum Kale, they landed 3000 men in six hours. We know the result. Suppose the Helles and Anzac boats had been reversed.

We must remember that naval landings are emergencies requiring prompt action in the initial phases of a war. The fleet cannot withhold its action until proper boats are constructed and allocated to the forces. We must have them ready or utilize the entirely unsuited means now available. And we must know how to use what we have—not what we hope to get.

This is a Navy problem. Others may suggest and recommend but cannot dictate the type of boats the Navy will use on naval combatant and auxilliary vessels. We Marines make the plan and ask the Navy to put us ashore in accordance with that plan—the means of landing is up to the Navy. We Marines only ask that they consider the means available, and, if they agree that it is not suitable, then assist us in the development and procurement of a suitable boat.

A boat meeting the requirements of a landing force would, in all probabilities, meet the routine requirements of the fleet.

If we have enough motor sailers and landing boats to land all troops in the initial landing, OK, but more than likely we will be fortunate to have enough to land the first two sub-waves. This means that the third and fourth sub-waves must embark on destroyers and tugs—at least to the number that cannot be accommodated in the landing boats.

Here we must consider the priority in disembarking. Shall we load the destroyers and tugs first and have them lie off and wait for the landing boats to be loaded and join them as "tows," or the reverse? This decision materially affects the arrangements on board the transport. The immediate rendezvous of that destroyer or tug must be known, as troops from more than one transport will join the same tow group. Furthermore, boats must be arranged in formation by tactical units so they may land in accordance with the tactical plan.

Advance to the beach.

The initial landing force is now all on board the destroyers, tugs, motor sailers and landing boats, tows have been formed, and they have taken position 1000 yards inshore of the firing ships.

At scheduled time, the tows and firing ships advance. Somewhere off there in the dark is a stretch of beach especially designated as a landing place for each group of boats. Each has its own zone of advance



Tows are made up and are proceeding toward the beach. The first sub-wave, consisting of sixteen boats in groups of four, is being towed by destroyers. The second sub-wave is being towed in the same manner by mine sweepers. Additional troops are embarked on the mine sweepers. The supporting groups of light cruisers and battleships are following in. An anti-submarine screen of destroyers is circling the Debarcation Area.

outside of which it should not go. If it gets too far to the right it will mix up with boats in the flotilla on its right—if too far to the left, it may miss its beach, land on an impossible stretch of beach, or get lost—in any case, put the tactical plan in jeopardy.

The firing ships and tows continue their advance, the former stopping when at their minimum most effective range and open fire. If this preliminary bombardment is to cover more time than the landing boats require to reach the beach, then the tows remain about 2000 yards inshore of the firing ships, and, on schedule, cast off and make for their beaches at best speed.

The motor sailers and landing boats of the first and second sub-waves, having landed their troops, return to their destroyers and tugs which have continued slowly to advance, and embark the third and fourth waves and proceed to the beaches.

Destroyers then withdraw to assist in fire support; tugs return to transports to assist in debarkation; and the motor sailers and landing boats function in accordance with the boat plan.

Now we can figure out our time schedule by working backward from the beach.

Let the beach be represented by zero.

Tows cast off at—4000 yards and proceed at 5 K—takes 30 min.

Tows formed at—16,000 yards, proceed to—4000 yards at 6 K—takes 60 min.

Landing boats shoved off from transports at—18,500 yards and formed tows at—16,000 yards—takes 30 min.

We then find it takes two hours to get from the transport to the beach. *Therefore*, troops must be embarked in landing boats not later than H—2 hours.

Time allowed to load landing boats depends upon many factors especially previous training and weather conditions. Experienced troops and much previous rehearsing will greatly reduce the time. Suppose we allow two hours.

Therefore, transports must be ready to receive the landing boats not later than H—4 hours.

Therefore, transports and train vessels carrying landing boats must be at anchor and these boats overboard in time to arrive at their assigned transports by H—4 hours. If we allow thirty minutes to put overboard plus running time to transport.

Therefore, train vessels carrying landing boats must be anchored or in position not later than H—4 hours 30 minutes.

Therefore, we need 4 hours and 30 minutes to accomplish the above *provided everything clicks perfectly*.

If we make H hour at 0400, our transports and certain train vessels must be in position by 2330.

Assuming darkness at 2000, that leaves six and one-half hours for mine sweepers to sweep and get to the flank out of gunfire—2000 to 0230—ships open fire at 0300 or 0330.

If we want to effect surprise, our mine sweepers should not approach the disembarkation point until after dark. We thereby reduce our sweeping time.

Let us throw a few monkey wrenches into the machine and see what conditions may well have to be overcome.

Some of the landing boats fail to report.

Empty gangway—no boat available.

Special boat for particular unit is late, lost or does not report. Unit must be landed. Takes two boats of another type and a redistribution of this unit's troops in the two boats.

Congestion at gangways getting right troops in right boats.

Weather and sea conditions limit debarkation to the lee side.

Boats straggle in joining their group and getting into formation due to engine trouble, boat officers unfamiliarity with the plan, or re-allocation of boats, *etc.*

Wind of force four springs up and reduces the speed of the boats. Plan was based on boats of a certain speed making a safety-factor speed. Wind and sea reduces the speed below that factor and troops will not be landed in accordance with the time schedule.

Due to reduced speed, the tide turns before we reach the beach and bucking both wind and tide slows us down still more—some boats might be lucky to make headway.

A rain squall suddenly drops its mantle over the entire flotilla of landing boats and makes it impossible to see the blue stern light of the leading boats or to recognize the flash light signals from the boats ahead.

A submarine which had been sent in close to the beach to act as a guide post for the flank detachment, cannot be located. The officer in charge of this group had depended upon this submarine to check up on his location.

You hear an airplane. A flare is dropped or a searchlight plays and shortly you are bombed and strafed by machine guns from the planes.

Does the job of the officer in charge of landing appear to be an easy one?

From this brief picture, I think we can all agree with Admiral M. M. Taylor, when he says:

"This requires on the part of the Naval Commander a thorough understanding of the plans of the troop commander in so far as his initial use of units is concerned; a thorough understanding by the officers in charge of boats and flotillas as to their duties and as to the necessity of adhering to the landing schedule. No part of the operation is more important or requires more careful planning than those covering the movement of the troops from the time they embark to their landing on the beach. Effective execution can only be carried out by thorough planning, exact following of schedules and complete understanding of the plan by all concerned."

One Flag Officer has said:

"Too much stress cannot be placed on the importance of the work of this officer. He cannot be casually chosen from a vessel of the fleet just prior to landing. He should be an officer of rank, experience, and proven ability, detailed to the duty as soon as the expedition is decided upon. He should have ample assistants, be in close touch with the C.G.F.M.F., and have full knowledge as to the forces and matériel; their proposed use and disposition. He should be embarked on the same ship as the C.G.F.M.F., or with that part of his staff who deal with the order of landing. On him largely depends the success of the expedition once it has reached the anchorage off the chosen landing."

The officer-in-charge of landing.

The Officer in Charge of Landing should:

1. Have charts, maps, field orders, administrative orders, tables of embarkation and disembarkation, and the orders in-



The landing is in progress. The four destroyers comprising the accompanying ships are in their flank positions. The submarine has left the line of departure and is proceeding toward the Debarkation Area. The light cruiser and battleship supporting groups are in their firing areas. Destroyers and mine sweepers are screening the transports and cargo vessels against submarine attacks.

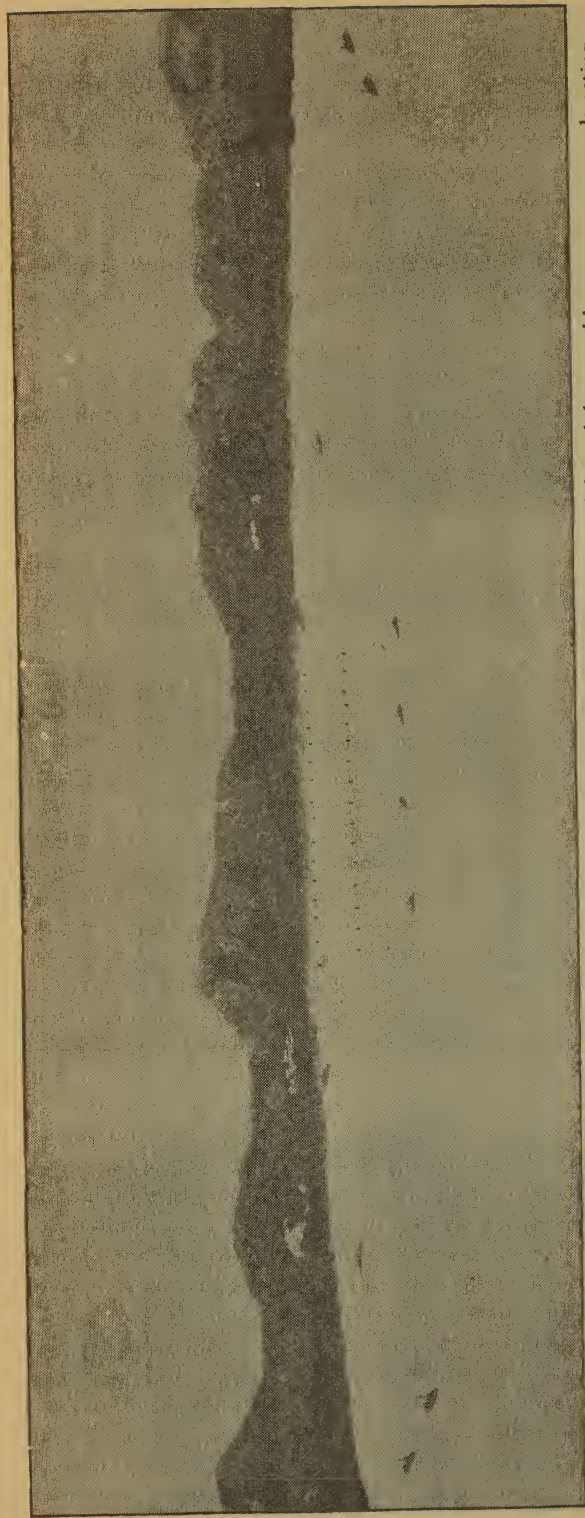


The four destroyers have cast off the tows of the first sub-wave and are delivering beach fire while heading for their flank positions. The landing boats which comprised the tows are heading for their positions in assault formation on the line of departure. The second sub-wave, towed by mine sweepers or tugs, is approaching the line of departure.



The first sub-wave of the Assault Force has just reached the beach. The second sub-wave has crossed the line of departure in assault formation. Accompanying ships are in position on the flanks. Mine sweepers are lying off prepared to disembark remaining sub-waves into the returning boats of the first and second sub-waves. The submarine which marked the line of departure is clearing the area.

Photograph No. 6



The first sub-wave of the Assault Force has just reached the beach and troops are disembarking. Meanwhile, two old empty cargo vessels acting as accompanying ships have been deliberately grounded on the flanks of the beach. They carry 8-inch naval howitzers forward behind sandbag ramparts, and numerous machine guns along the decks protected by steel plating. With these guns they are sweeping the beach defenses over the heads and from the flanks of the assault troops. Two destroyers, also acting as accompanying ships, are in flank positions from which, prior to the close approach of the landing boats, they delivered strong enfilading fire on the beach. This fire has now shifted to a zone in advance of the first assault wave. Two offshore flank supporting groups of light cruisers, which delivered beach and counter-battery fire in advance of the landing, have, in accordance with the time schedule, lifted their fire ahead of the troops. They are in excellent position to take advantage of the shore line conformation and inland terrain features for the delivery of neutralization and interdiction fire in the valleys and on reverse slopes which can only be reached by fire from enfilading positions. Four mine sweepers, having cast off their tows near the line of departure, are prepared to disembark remaining sub-wave into the returning boats of the first sub-wave. The second sub-wave is approaching the beach in assault formation.

Photograph No. 7

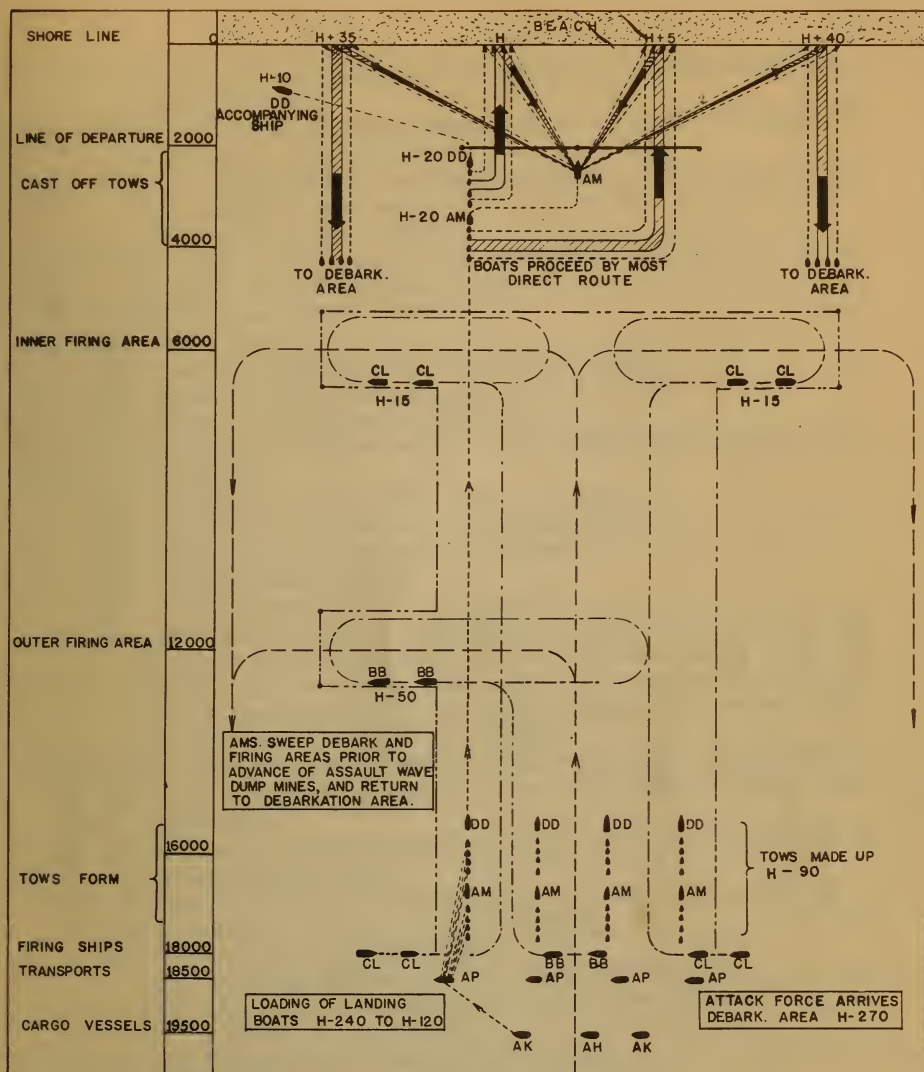
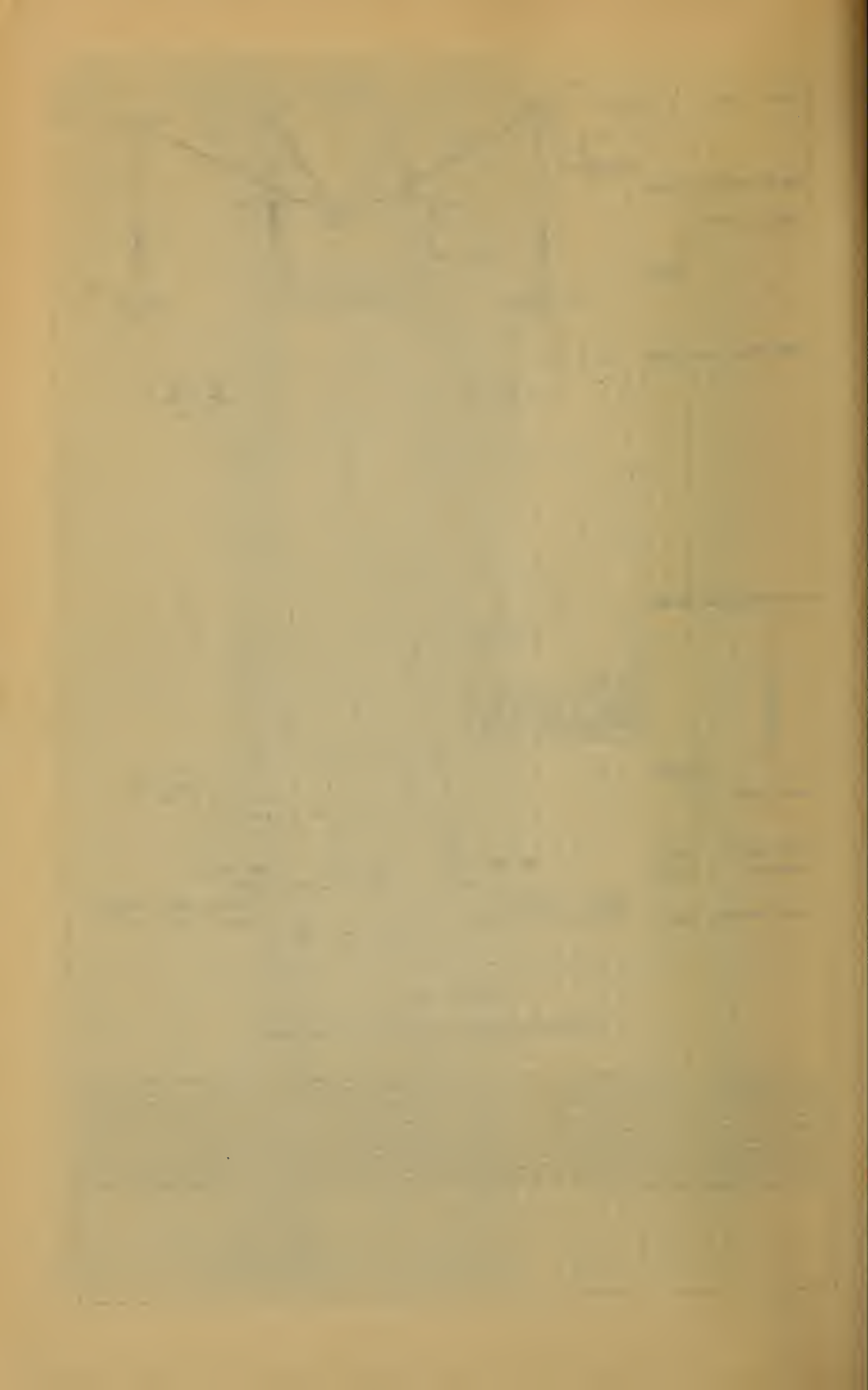


DIAGRAM ONE.

DIAGRAMMATIC SKETCH OF LANDING OPERATIONS

(Not to scale)

This diagram illustrates the movements of naval gunfire supporting vessels and landing boats from the time the Attack Force arrives at the Debarkation Area until the landing of the Assault Wave is completed. Speed of tows and firing vessels is 6 knots. Figures in the left column represent distances in yards from the shore line. Notes in this column are self-explanatory. Times in the main diagram are based on minutes plus or minus with reference to H hour. They indicate times of arrival and periods of operation of supporting vessels and landing boats in positions and areas. Only the landing boat movement originating from one AP is followed throughout. Broad shaded lines indicate continuous boat movements from the time tows are cast off until the boats thereof complete their operations and head for the Debarkation Area. Arrows indicate direction of movement. Distance of AP's from beach is based on 17,500 yard shore artillery range. Firing courses of supporting vessels are represented by ovals. Courses of landing boats and towing ships are represented by dotted lines. The representation of boats landing on the shore line is diagrammatic only. Naturally these boats would proceed from the line of departure in assault formation by the most direct route, and not spread out as shown. In this landing it is assumed that not enough boats are available to land all the sub-waves of the Assault Wave without re-loading from the AM's.



- volving the movements, disposition and actions of all supporting vessels.
2. Should go on air reconnaissance of beaches prior to landing, if an air reconnaissance is made.
 3. Have best information available regarding tides, winds, currents, reefs, shoals, nature of the beach, and distance debarkation point to the beach.
 4. Have a list of boats and their assignment showing size, type, capacity, speed and boat number.
 5. A debarkation table showing:
 - (a) Wave number.
 - (b) Hour for landing each wave on the beach.
 - (c) Beach at which each organization is to land.
 - (d) Type and capacity of boats.
 - (e) Number of troops and of what organization assigned to each boat.
 - (f) Transport or ship from which troops come.
 - (g) Gangway to be used by each organization.
 - (h) Time each unit is ready to embark.
 - (i) Weight of equipment.
 - (j) Space in cubic feet of equipment.
 6. An assistant detailed to act as his representative with each group of boats designated to land at a particular beach or a particular section of the beach. This assistant should be on the transport with the troop commander who will command this tactical group on shore.
 7. Have a speed boat for himself and one for each of his assistants.
 8. Be able to communicate with the troop officer commanding each wave.
 9. Be on the same ship with the C.G.F.M.F., and join him at the earliest possible time.
 10. Prepare boat plan and issue detailed instructions regarding:
 - (a) Equipment and numbering of boats.
 - (b) Movement of landing boats:
 - (1) To assigned transports or other troop-ships.
 - (2) Disposition of boats already loaded and waiting for others to be loaded.
 - (3) Disposition of extra boats, if any.
 - (4) Assembly of loaded boats.
 - (5) Formation and organization into waves.
 - (6) Formation in breadth and depth for the advance.
 - (7) Direction of the advance.
 - (8) Navigational aids prepared.
 - (9) Intercommunication between groups.
 - (10) Formation and rendezvous of tows.
 - (11) Scheme for transfer of troops from transports to destroyer or tug, and then to landing boats.
 - (c) Duties of boat officers:
 - (1) One officer to each landing boat.
 - (2) Familiar with approaches, land marks, navigational aids and compass course to beach.
 - (3) See that boat is properly equipped before it leaves its own ship.

- (4) Do not permit boat to be overloaded and maintain the load below capacity load.
- (5) A thorough understanding of his orders regarding place of reporting, loading, assembly, place in formation, destination, method of communication, and disposition after troops have debarked on the beach.

We may now see why the debarkation table contains so much detailed information. The troops and equipment to be landed must be coördinated and made to fit the means of landing. The troop commander presents a plan of when, where, and how he would land his troops. The Officer-in-Charge of Landing must adjust his means of landing to meet this plan or the plan must be modified to meet the means. Weight, size, number, priority, capacity, speed, sea-worthiness, time, are some of the factors affecting men, matériel and equipment, which must be dovetailed smoothly into the plan by the Officer-in-Charge of Landing.

No Naval Commander can place a greater responsibility upon the shoulders of a subordinate than that demanded of the officer charged with the landing of troops against an organized defense.

Any schedule prepared must be sufficiently flexible to meet existing conditions. Many incidents might occur which would cause a too rigid schedule to break down entirely. For example—boat No. 5 from cargo vessel No. 1, is late. Troops are at the gangway, ready to load this boat. Boat No. 10 from cargo vessel No. 1, of the same type, is lying off waiting for its load. Shall we hold up the embarkation at that gangway; shall we order the troops away from the gangway, bring up the next troop unit and call the next boat alongside; or shall we take the next available boat of the same type, as No. 5, and load the waiting troop unit? These are the details which must be worked out by the O.C.L.

Beachmaster. All that has been said of the Officer in Charge of Landing regarding knowledge of plans, orders, instructions, conference with C.G.F.M.F. and staff, information of weather, sea and beach conditions, apply with equal force to the Chief Beachmaster, who is a naval officer and lands with the first wave.

He controls the beach from highwater mark seaward and has charge of all naval operations on the beach, landing facilities, beach recognition marks, organizes and controls naval beach communications, evacuates sick and wounded, coöperates with the commander of the Shore Party, and has an assistant beachmaster for each landing beach. A beach party of the necessary personnel accompanies each beachmaster.

Communication between ship and beach must be established at the earliest moment possible and signal parties equipped with radio, blinker, flag, *etc.*, must be in the first landing group and sufficient stations established to give quick communication to flagship, covering fire groups and transport groups.

Wave lengths must be assigned, special pyrotechnic signals agreed upon and auxiliary signal methods provided. When possible, supplement communication by messages via boats bound for the desired ships. Code work should be reduced to a minimum as time lost in coding and decoding may be vital.

The beachmaster should also make an air reconnaissance of the beaches, if air reconnaissance is made.

The beachmaster is the sole connecting link between the troops on shore and the C-in-C, CG and supporting ships. If his communication

system is OK and the information is delivered to him, the supporting ships will know how to support. If his system fails, so may the attack, due to unavoidable ignorance on the part of those still at sea. I will have more to say about communication later.

Shore Party Commander. A marine officer, one for each landing beach, with ample assistants to take charge of all labor, troops, equipment and supplies as soon as landed by the beachmaster.

He organizes beach facilities such as dumps, collecting stations, prisoners cage, etc., He establishes information and communication centers, facilitates the movement of troops inland and coöperates with the beachmaster. He usually has an engineer party which in addition to performing shore party work, assists the beachmaster in establishing and improving landing places for boats, removing obstacles and obstructions, and the erection of temporary wharves.

His communication system *must* function and move forward with the troops as they advance in order that vital information may be promptly relayed back to the ships.

Night and day landing. It seems pertinent here to note the difficulties involved in a night or day landing. We hear many arguments, pro and con the approach under cover of darkness and landing just before dawn.

If we consider the difficulties, from the naval viewpoint, of a night move to the debarkation point, we find the factors;

1. Darkness.
2. Navigation aids—removed or altered.
3. Mine fields—more difficult to locate.
4. Sweeping passage thru mine fields—more difficult and hazardous.
5. Passage of ships thru swept areas—more difficult and hazardous.
6. Defense against submarines—less efficient.
7. More difficult to locate assigned areas for ships.
8. Greater possibility of collision.
9. Greater difficulty of rescuing troops from damaged transports.
10. Greater difficulty of lowering boats without lights.
11. Greater difficulty in debarking troops.
12. Increased difficulty of ranging and spotting supporting gun-fire.
13. Difficulty of scouting, observing and spotting by air.
14. Increased difficulty of opposing an air attack.
15. Difficulty of warding off a destroyer attack.
16. Difficulty of night counter-battery work.
17. Difficulty of landing at designated beaches.
18. Confusion in landing boat formation.
19. Confusion and congestion at the beach.
20. Difficulty of the C-in-C maintaining a proper conception of the progress of the operations.

Hence, the enemy naval tactical strength influences the C-in-C's decision as to the hour of landing.

Against this we must consider that in a daylight advance:

1. Secrecy and surprise is almost negligible.
2. Enemy naval forces, air, and land batteries may force the embarkation of troops into the landing boats a great distance from the beach. This factor alone will bring on many difficulties.

3. Defender knows, by his excellent observation, the strength and direction of the attacker's approach.
4. The defender's reception committee, referred to before as the things we might encounter during our approach to and on hitting the beach, due to increased efficiency in their observation, fire, communications and ability to maneuver and deploy for action, may, and will, if the attack is against an organized defense, cause such serious losses as to make success merely a forlorn hope.

At Gallipoli, the Navy *demand*ed a daylight landing at Helles; *concurred* in a night landing at Gabe Tepe; and after protest, *agreed* to a night landing at Sulva Bay.

This decision as to the hour of landing is made by the C-in-C. The C.G.F.M.F., if not of the same opinion, must present his views to the C-in-C, but there is no question of paramount interest, divided or joint responsibility, as in a joint Army and Navy landing. The decision rests with the senior naval commander and his decision is final.

If there was no other reason involved, this fact alone should cause every naval officer to give serious thought, study, and consideration to expeditions of this nature.

As a result of my study of this question, I am asking myself the question.—

Are we on the wrong track?

Should we get away from the tactics and type landing that we now contemplate?

Is there not a great difference in the operations of a Naval-Marine landing to seize a base, and the landing operations of an Army, which arrives after a base has been established?

Will our 10-knot transports and 5-knot landing boats do?

Are we studying this problem strictly along Marine Corps lines, or are we merely absorbing and crystalizing the old methods with an occasional new idea thrown in?

Should we get away from this slow, cumbersome equipment and develop something which will permit speed, surprise, dash and a quick blow peculiarly suited to Marine-Naval problems?

What could we do with a 20-knot transport and a 20-knot landing boat that we cannot do now?

Enemy aircraft and submarines will make *speed* an important factor.

We say that a landing against organized resistance is impossible and yet, someday, we may have to attempt the accomplishment of this "impossible."

Are we developing methods to overcome this impossible?

We say that we will try to land where there is no resistance.

How can we, when by slow, cumbersome methods, we do not only make a surprise landing impossible, but we give the enemy all the opportunity to carry out the basic idea of his defense, that is, to observe improbable landing places, defend probable places and move reserves to actual landing places and drive out by counter-attack?

I must confess that the idea of landing with our present or even contemplated equipment against a real, organized defense, looks like a hopeless task to me, unless we change our tactics.

Hence the question—

ARE WE ON THE WRONG TRACK?

NAVAL SUPPORT OF A LANDING BY GUNFIRE AND OTHER AGENCIES

Naval Gun-fire Support

PART THREE

General Hamilton, in his dispatches, wrote:

"Normally it may be correct to say that in modern warfare, infantry cannot be expected to advance without artillery preparation. But in landing on a hostile shore, the order has to be inverted. The infantry must advance and seize a suitable position to cover the landing and to provide artillery positions for the main thrust. The very existence of the force, its water supply, its facilities for munitions and supplies, its power to reinforce, must absolutely depend on the infantry being able instantly to make good sufficient ground without the aid of artillery other than can be supplied for the purpose by floating batteries. This is not a condition that should take the commander of a covering force by surprise. It is one already foreseen."

Corbett, in commenting on this remark, says:

"Whether or not the latest experience goes to show that under modern conditions this principle will no longer hold good, may be regarded as an open question until it is proved that the control and nature of floating fire cannot be developed so as to meet new conditions."

Just what value Hamilton gives to naval gun-fire support is somewhat obscured in his statement, but Corbett leaves no doubt as to his opinion. With him it is an open question until it is proved that naval gunfire cannot be developed to meet the modern conditions in warfare.

The general conclusion reached by most writers on the subject of naval gunfire in support of a landing is that it is not suited to properly support such an operation.

Some of the reasons given for this conclusion are:

1. Naval guns were constructed to fire at ships.
2. They are not suited to perform tasks required of land artillery.
To make them do both would weaken their naval fire effect.
3. Short life of naval guns.
4. Flat trajectory with small angle of fall.
5. Ammunition not suited for land targets.
6. Limited ammunition allowance.
7. Ship has little room for additional special ammunition.
8. Relative position of firing ship and land target must be definitely known in order to put MPI on target.
9. Night firing impracticable due to absence of plane spot and indefinite relation between firing ship and land target.
10. Difficulty in extending ship fire control system to the beach and in land.
11. Submarine risk to capital ships.
12. Risk of combatant ships to concentrated fire of enemy heavy mobile guns with air spot.
13. Risking heavy ships may weaken our battle line.
14. Ships assigned to support a landing must be of type and number which can be spared from operations with the fleet for a considerable period.

And so they contend that the employment and control of naval gun-

fire against harbor defenses, against heavy mobile guns, in close support of a landing, against beaches, in concentration, interdiction and bombardment of land areas, is an emergency employment of naval vessels predicated solely upon the absence of other more suitable equipment and that the type, ammunition, fuses, amount supplied are basically unsuited for providing the kind and volume of fire desired for support of an assault against a defensive position.

Before we can discuss this "open question" let us see what may be expected from the ships in the way of gunfire.

Counter-battery fire against guns firing on transports and troops during debarkation; on troops and supplies enroute to the beach; on troops at the landing beach; on troops advancing inland; on light vessels in close support.

Preliminary bombardment of landing beach, especially the shoreline and its immediate hinterland, in order to break-up enemy beach defense. This preliminary bombardment may or may not have definite targets. Prior information and reconnaissance may have developed definite areas, but frequently the fire is at a general area with the hope of developing the enemy, make him show his hand and open with his artillery thereby disclosing their positions. The air force may locate definite targets. In any case, the beach and beach area must be an objective and must receive a heavy and searching fire. Then, just when the attacker nears the beach and needs the fire a few hundred yards ahead to keep the defenders under cover and prevent them manning their defenses and resisting the attack, naval gunfire, due to its limitations, must lift 1500 or 2000 yards and leave the enemy beach defense and close support free from bombardment.

Concentrations must be placed inland from the beach until the assault echelons are established on the beach. These concentrations should be placed as close to the assaulting troops as safe firing will permit. Their targets will be strong points holding up our advance; enemy support and reserve positions; searchlights, if operating during our approach; on known locations containing ammunition and supply dumps, hangars and important defense areas; on enemy flanks. In connection with this flank firing, when ships are assigned to protect a flank, they too, must know what to shoot at and have a fire control party ashore, ready and able to give them the needed information.

Interdiction fire on important points of enemy communications and routes of approach for their supports, reserves and supply.

Searching fire to wipe out opposition in the form of machine-gun nests and isolated guns and batteries which cannot be located by plane or land observation posts and yet are holding up the advance.

These fire missions indicate the necessity for carefully prepared plans in assigning and locating ships groups for close support, long range fire, general support and special emergency fires; for fire control and distribution; for ammunition supply, for gunnery communications; and for air support.

A few figures here might be of interest. At Gettysburg, the Federal Forces, 100,000, fired in 3 days, 32,781 rounds of artillery. At St. Miheil, the American 1st Army, 550,000, fired in 4 hours preliminary bombardment, 1,093,217 rounds. The total ammunition carried by 428 U. S. Naval combatant vessels, including gun-boats and Eagles is 910,805 rounds. A force composed of 15 BB, 16 CA, 14 CL, 13 DD, and 9 SS carries 245,220 rounds. At 27,000 yard range, this force could fire

408 rounds per minute for one hour and 13 minutes. At 13,000 yards, it could fire 2274 rounds per minute and at that rate, would exhaust its ammunition in one hour and 47 minutes. Apply any factor you please to reduce that rate of fire (it is based on War College figures) and you still have a tremendous bombardment, when you consider it is concentrated on a relatively small area, as compared to the battle front of the First Army, approximately 20 miles.

Another point. All shore batteries are not all on the beach but are staggered in depth and the objective of all rear guns is not ships but small boats enroute to the beach, the water just in front of the beach and troops attempting to advance after landing. Many 75 $\frac{7}{16}$ guns, with their effective range of 8,000 or 15,000 depending upon old or new gun, would be a considerable distance back from the beach, so that a ship 20,000 yards from the beach might have to shoot 25,000 yards or more to reach these batteries.

Fire control is the function of the naval officer.

Fire distribution is the function first, of the prearranged fire schedule and, later, of the troop commander. The commander of the troops being supported by a group of firing ships indicates to the naval gunnery liaison officer on duty with him, the area and location to be fired on, the time to commence and the time to lift or cease firing. The naval gunnery liaison officer communicates this request to the firing ship or group. This officer must advance with the troops from the beach and be connected with his forward observer and the beach gunnery communication center by telephone.

These plans should include:

1. Map system providing for designation of targets and control of fire from a common map. A naval chart and a topographical map of a land area must be coördinated with a common scale and grids and then joined together, or else one common map must be prepared prior to the departure of the expedition. Many naval officers contend that the land operation map must be gridded in latitude and longitude and request for fire to designate the target location to the nearest ten seconds.
2. Responsibility for and methods to be employed in initiation, control, distribution, lifting, shifting or ceasing fire.
3. Designation of objectives, time schedule and volume of fire required.
4. Spotting methods, including means for identification of fire, gunnery reconnaissance by planes and shore observation posts.
5. Redistribution of fire in the event of loss or absence of any firing ship.
6. Employment of smoke screens to cover firing ships, landing boats, beach, or rear areas.
7. The use of star shells, flares and searchlights to illuminate targets or designated areas.
8. Communication plan for control of gunfire—between OTC, (naval officer in tactical command), firing group commanders, firing ship, ship and planes, and all of the former with certain designated headquarters ashore.

A most important item.

9. Movement of supporting ships and boat traffic in the support

area.

10. Gunfire to cover a forced withdrawal of troops ashore.
11. Supply, location, allocation, type, amount and distribution to firing ships of any excess or special ammunition.
12. A definite statement of the power and limitation of each firing ship from a gun-fire point of view in order that the tactical plan may be based on a definite naval gunfire. Fire is from one side of the ship only.
13. The air plan, naval and landing force aircraft. Its early reconnaissance, if any, and its combat action in direct support and defense of the fleet, and in direct support of the landing troops and their subsequent operations.

There you have the naval problem.

Ships' fire support **MUST** be sufficient and **MUST** remain and continue in support until the troops are established ashore. Trenches and machine guns are hard to hit with flat trajectoried guns and yet trenches and machine guns are what stops the attacking troops' advance.

We know there is a great difference between naval and land artillery fire. Fire of the former may cause a temporary cessation of fire from shore defenses, but it does not necessarily destroy enemy materiel and put their guns permanently out of action. Naval gunfire does, however, accomplish much more than we have given it credit for. We hope this fire will destroy much of the enemy beach defense, silence his guns and wreck his morale but this information cannot be confirmed until the troops reach the beach.

What are we going to do about it?

Agree with those who contend that our ships and equipment are not suited to this type of operation, sit tight and let the next war find us no better prepared to seize and hold a defended fleet base than we are today?

* ~~Or~~ shall we recognize the fact that naval gunfire *has been, is, and will be* effective against land targets and in support of a landing, and energetically continue our efforts to improve the old and develop new methods for the delivery, control and distribution of an effective fire that *will* furnish the fire support essential to such operations?

In 1891, Admiral Colomb of the British Navy, wrote:

"If sufficient war ships are present, and their fire available, it should easily prevent loss in embarking (in small boats and advancing to the beach)"

If that be true, why is it that ships of 1933 cannot do what was possible for ships of 1891? In spite of the fact Britain's wars have all been overseas expeditions, and that she has had more experience in this class of operations than any other power, Admiral Colomb's doctrine certainly did not work out at Gallipoli.

But was that the fault of the British Navy?

Yes—and it may be our fault if we do not take advantages of and profit by the bitter experience of the British in that campaign.

The British and French navies furnished enough support to permit Hamilton's army to march to Constantinople and back, provided that Army and Navy had arrived off the Dardanelles with a plan of action and prepared to carry out that plan.

Hamilton constantly decried his lack of artillery and artillery ammunition. If a proper reconnaissance had been made; if proper preliminary combined planning had been done; if the fleet gun-fire support had been properly tied in to the tactical plan; if the ships had been as-

signed targets and fire missions which their fire could reach; if the landing had been based on a proper conception of what and where ships could support by fire; if the British Navy had known one-quarter as much about naval support in April as they did in November; it would seem that Hamilton had, in the naval gunfire then available, a much greater and more powerful artillery support than he could have possibly made available initially with mobile land artillery.

Mind you, I do not contend that naval gunfire can replace or is equal in efficiency to mobile artillery in land operations. But I do contend that it is a good substitute and can produce effective fire support if properly controlled.

The British Navy started the war in Gallipoli and failed for want of an army.

★ The Army arrived and failed, not because of the failure on the part of the Navy to support their land attacks, but because the great potential power of these naval guns was not properly utilized in support of and in combination with the Army attacks.

The Army and the Fleet were to act side by side, the former helping the latter thru the straits. The Navy got behind (not alongside) the Army and tried to push the Army up to the vital land areas controlling the Straits, and they did not know how to push.

Then, when the Army announced the game was up and decided to evacuate the Peninsula, the Navy, too late, begged and pleaded for one more crack at it with a combined attack—an advance thru the Straits and naval support to Army attacks.

Many of the purely naval plans were excellent in their conception and execution. And we may make the same comment with reference to many of the army plans. But combined planning, in which the powers and limitations of each arm were carefully considered and one balanced against the other until the best solution permitting the best joint effectiveness of both arms were determined—such planning, in the early part of the campaign, was prominent by its absence.

The Navy did not know what it could do.

The Army did not know what the Navy could do.

And when they found out—it was too late, at least too late to overcome the opposition at home.

Are we better informed today than was the British Navy in April, 1915? Do we know what we can do in a similar emergency?

The British Navy claimed that the Army's estimate of the value of naval support was based on results obtained in the early days of the campaign when the ships had practically no ammunition and all the ships were inexperienced in this kind of operations. You see, the Navy makes no apologies for their inexperience. This was not the case later. They had had a years actual war experience. They had improved their methods of spotting, observation, communication, direction and control of fire. They knew where to look for targets and were better able to recognize them when seen. They no longer boomed away at the high cliffs and expected to kill Turks under cover behind them, but maneuvered their ships into positions where their flat trajectories would sweep the gullies and ravines and enfilade the enemy trenches and areas behind the cliffs. They rendered this support even if the ship had to stick her nose on the beach to do it. They had become much more efficient at night firing and it was not uncommon to flash a searchlight, pick up enemy troops moving to attack or going into position, open fire and

inflict sufficient damage to destroy the force or break up the attack. Their counter-battery work had silenced battery after battery. Their supporting fire had broken up attack after attack and made possible many forward movements of their own lines. Their concentrations had destroyed reserves, dumps, depots, ships, barracks, billets, etc. Their interdiction fire had destroyed bridges and made roads impassible

Lack of time prevents my telling you of a few of the things the ships' gun-fire accomplished. At Chocolate Hill, at Anzac, in enfilading ravines, silencing batteries, slaughtering reserves, supporting advances, night fire; at "X" beach, which is referred to as a model of combined operation; at "S" beach, where the landing would have failed but for ships' fire; at "W" and "V" beaches, where but for ships' fire the allies might have been forced to evacuate; how thruout the whole southern end of the peninsula, the ships' fire finally prevented the Turks making anything but a night attack; and at Kum Kale, where both landing and reembarkation were made possible only by ships' gunfire. Etc., etc.

Intelligence reports state "The demoralization of the Turks was greatly deepened. . . . by the growing accuracy of the ships' fire on their billets, reserves and magazines." (Corbett, II).

Turkish prisoners at Anzac, 26 April, described fire from the sea as appalling—and made it almost impossible to get the Turks out of shelter of the broken ground and prevented anything like organized attacks from developing. (Corbett, II, 349).

Turks say, regarding landing at "S," that owing to the severity of the naval bombardment, two field batteries sent down to resist the landing were unable to fire and a howitzer battery could only get a shot in occasionally. (Corbett, II, 337).

General Davies, commanding Helles, in October planned for tactical coöperation in an attack, with Captain Dent, who was an accomplished gunnery officer and commanded his supporting squadron. Lt. General Sir F. J. Davies, in his report, says:

"All who saw it agree as to the accuracy and volume of the monitor's fire, but the chief point is that it has been established that coöperation in an attack has now become a practical reality and that a system has been established which with further development will prove a powerful factor both in attack and defense." (Note—and due to weather conditions this support was rendered without air spot).

Corbett, in referring to this attack, says:

"The operation was a complete success. . . . so completely did the fire of Captain Dent's squadron demoralize the Turkish gunners that we were able to seize and consolidate the captured section with trifling loss."

Does that indicate to you that ships cannot support land troops by fire?

On the contrary, we might be led to believe that the troops at Gallipoli advanced as far as they did *because* of the ships' fire support, and their failure to advance further was *because* they were reaching the extreme limit of the ships' fire support.

Corbett says:

"To them (the Turks), the fire of the ships was so systematic as to preclude movements either of guns or troops except at night, and so far from its tactical value being negligible, there is no longer any doubt that it was the determining factor which saved our men

from heavy counterattacks in the early stages."

and he continues—

"The destruction which the ships' guns had wrought in the comparatively open country had put an end to all talk of driving us into the sea, and Essad Pasha had ordered the whole southern force to fall back on the lines that had been prepared in front of Krithia, in order, so we are told, to save it from being annihilated by the fire of the fleet."

The British Navy had been at this for a solid year. They were good and they knew it. They had not given up by saying that their ships and ammunition were not suited to the work and therefore could not properly support the Army. They kept on, improving this system and developing that system until they had convinced themselves of their own ability to produce what the army needed.

May 1, at this point ask the question—Are we taking steps to make our supporting fire equal in efficiency to that of the British ships in November, 1915?

And yet, how can we reconcile these facts with the statements of Hamilton, Caldwell, Corbett, de Robeck, Wemyss, von Sanders, Turkish General Staff, German officers with the Turkish Army, and others *ad infinitum*, who would convey the impression that naval gunfire, "due to its flat trajectory, was of little assistance to the infantry?"

I wonder how they themselves can reconcile their own statements, when, after reading their books and their reports, you find recorded incident after incident, attack after attack, defense after defense, in which they attribute all or a part of their success to naval gunfire.

Hans Kannengiesser, a German staff officer and division commander with the Turkish Army, in his book, "The Campaign in Gallipoli," in speaking of the attacks on 25th and 26th of April, says—

"The moral effect of these (the naval flat trajectoryed gun) on the defender is great, but the actual effect is not fully felt by the intrenched troops, who as a target are lying below the trajectory of the guns. This is the explanation of the almost *laughably* (my italics), small losses on the Turkish side, in spite of the enormous preponderance of the Entente in ships' guns which out-ranges the land artillery, besides being heavier in calibre."

His observations made six days later, on 2 May, may still be *laughable* but the laugh seems to be on the other side, for he says—

"As soon as the light was sufficient to allow the ships to shoot at the Turkish line an attempt to stay forward was equivalent to suicide. They, therefore, had to withdraw and carefully dig in where they found themselves at dawn. Any attempt at movement, any sign of life during the day was impossible, because whoever showed himself was immediately shelled from the ships. . . . everything here living which showed itself by day must be killed. The food supply, munitions, stretcher-bearers, reinforcements, and last, but not least the attack, in short any movement could only be possible under the protecting mantle of night."

And as a result of these observations of this *laughable* fire, he reported to von Sanders and "He (von Sanders), completely agreed with me that it was useless to attack further and that we must prepare a defense."

Many of these writers were actually present and wrote of what they saw and the impressions made at the time—and then, later—in the quiet of their literary studios, held a post mortem—and concluded

that in spite of the terrible ships' gunfire, the allies lost, therefore, the naval gunfire could not have been so very effective.

Even the conclusions of the Final Report of the Dardanelles Commission with regard to naval support must be taken with a grain of salt when we consider the lack of data presented from the naval view-point, as of the 165 witnesses called only seven were naval officers. (1 Vice-Admiral, 1 Rear Admiral, 1 Commodore, 3 Captains, 1 Doctor).

And these cases cover every item of essential gun-fire support except two. The first exception is the keeping the enemy in his trenches at the time the infantry is ready to assault, and the second is the destruction of wire entanglements. All other fire missions, in preparation and support, the ships furnished efficiently, not once, but time and again during the period of the campaign.

It seems to me that in our study and observation of this question of ship gunfire we fail to separate and draw a distinction between the effect of (1) ships' gunfire against forts and fortified areas, and (2) ships' gun-fire in support of landing troops and their subsequent operations. History records few successful operations of the former type but it is replete with major and minor successes in the latter class.

Many students of the Gallipoli campaign seemed to have based their opinion on the impotency of the fleets' fire, by actions of March 18th and prior thereto, and have given little or no attention to what the Navy really did on April 25th and subsequently. I am not so sure that the attack on March 17th would now be classed as a failure had it been followed by another attack on the 19th. Then what would we have had to say regarding ship gunfire?

We are prone to make the flat statement that ships cannot fight forts. I would qualify that statement by interposing the word, "some" before the words, "ships" and "forts." We must also answer the question—is the loss of one or more ships worth the occupation of the forts? That is beyond the scope of this paper, but it brings up the point, that, if we will dig out the why success, the why failures, in past operations of ships against land targets, and then engage in some real, honest-to-God, experimental exercises, we may be able to find correctives that will reduce our failures to a few and increase our successes to many.

Yet, with all the potential strength of naval gun-fire support, there is that most important mission that with present equipment it cannot accomplish—and that is—maintain a bombardment on an area until friendly troops are ready to attack that area, and then lift the fire a short distance ahead to keep the enemy down while the attacker occupies it. This is where land troops suffer tremendous losses. Bombard a beach as you will; if that bombardment lifts, to prevent hitting our own attacking troops, and drops its shells 1500 to 2000 yards in rear of the beach, what have we to keep the enemy from manning his defenses and pouring forth his poison from every available infantry weapon. Only the air bomb—and that is dependent upon too many factors to allow us to base our landing plan on its results.

When the British attacked Helles, it was at first thought by those on board ship and in the boats that the enemy had been massacred by the preliminary bombardment, as there was no fire on the boats as they approached the beach. The Turks would have been slaughtered had he remained subject to that bombardment, but he didn't—he took cover, and then when the fire lifted or ceased, he manned his positions and opened fire.

The Turkish comment is that the bombardment of Helles was terrible, but too short, and if continued for a longer time, it would have had its repercussion on the Turkish morale, inflicted greater damage to their positions, and the allies would have landed at greatly less cost.

Naval vessels were constructed solely for the purpose of fighting enemy naval vessels and their guns were built and installed for that purpose. When the air force became a factor of importance, ships included in their armament guns which could fire at planes and they are now a most important part of that armament.

It is now past time when we should realize that naval guns must be able to fire at land targets and furnish that one important type of fire needed to efficiently support troops in their landing operations, as well as firing at ships and airplanes.

Why should the most powerful military unit in existence, a \$50,000, 000 modern battleship, capable of throwing tons and tons of explosives at an enemy target ten to seventeen miles distant, with an accuracy that even the naval gunnery expert witnesses with pride, be limited in its offensive power by a flat trajectory and type of ammunition?

A high angle of fall and a thin walled, high explosive or shrapnel shell, with a sensitive or time fuse, would force the defender to his dug-out and make the landing beach a comparatively safe place as to what it will be without some radical change in our naval gun-fire support.

We must remember that it is not the *ship* behind the advancing troops that supports them but the *shells* in front of the troops. It is not the number of ships but the number of guns and accuracy and volume of fire. The relative position of the firing ships is not determined by the position of the troop column which they are to support by fire, but rather by the nature of the terrain over which the troops must advance, in order that the shells from these supporting ships may furnish the support needed.

Close-in Support.

Let us now see how these ships are going to fire from the position where we left them 6000 yards from the beach. (See Part II, page 49).

Using the "guide buoys," to reach their firing position we must hope that they will be able to keep an accurate plot of their position while firing, even tho underway. (See Photo No. 4.)

In order to cover a certain beach area, the usual procedure of concentrating salvos will not work, and in darkness, with inability to see the target area or distinguish land marks, it will be most difficult to place the fire where intended and needed. So, in order to insure a spread to cover the front assigned to a ship, it will be necessary for each firing ship to determine for itself the offset in train from the "director" bearing that must be given each gun.

To determine the number of guns necessary to cover and search an area of a certain frontage, someone has taken, for want of definite data regarding naval guns, the artillery formula of four $75\frac{m}{m}$ guns to one hundred yards of barrage and interpolated naval guns into $75\frac{m}{m}$ equivalents. They obtain 3"-1; 4"-1 $\frac{1}{2}$; 5"-2; 6"-3; 8"-6; 10"-8; 12"-10; and find that a BB of the Wyoming class equals 172-75's; Utah class 152-75's; an OCA Huron class 92-75's; an OCL Denver class 11-75's; and a DD 4-75's.

Those are merely figures. If we accept them, then a BB, Wyoming class, can cover a 4300 yard front. But why stop at figures. We can find out what a BB can do by taking a regiment of Marine Artillery

75's and a BB, and go off and fire at some barren island and actually make a comparison upon which we may base our naval gunfire.

In assigning a position to each firing ship, we must

- (1) place the ship where its fire will be effective in the preliminary and supporting fire.
- (2) its fire must damage the enemy and assist, not interfere, with the troops landing and subsequent advance.
- (3) from within the boundaries of its sector, it must be able to continue its fire support thru successive stages of troops, advance, shifting its effective fire to other areas and at increased ranges.
- (4) Each ship must be assigned at least three fire missions—
 - (a) Direct support of designated troops.
 - (b) On request, if fire can be spared, fire in support of troop sectors adjacent to your own troops.
 - (c) Emergency support over any part of the front within range of its guns.
- (5) Ships must avoid natural and enemy hazards.

In addition to the above support, certain ships, if available, should be assigned to long range bombardment and interdiction fire.

Many of these targets and target areas are shown on the artillery over-lay or gunfire map, and targets are designated by number, letter or geographical name. Each firing unit has a copy of this map.

Our first important fire mission is to destroy wire entanglements in the water and on the beach and to place a heavy fire on the beach area. To destroy wire requires many guns, much ammunition and a considerable period of time. The only naval gun we have able to accomplish this is the 8" anti-submarine howitzer of 2600 yard range. You know how the Navy failed to destroy beach and water wire at Helles. If we can get this 8" howitzer to within range of the beach and carry out an intense bombardment with them, the effect should be tremendous as they have a very high angle of fall and a very high explosive effect. Its value just before and just after the troops landed would be immense.

Plans may be prepared for the conversion of cargo vessels into supporting gunnery ships, armed with six 155^{mm} howitzers on navy mounts and having special wells fore and aft where the guns, in groups of three, can be mounted all on a center line, each group with director control. This will make possible a high angle, searching fire at ranges of 12,000 or 16,390 yards depending upon the type of gun.

But can these cargo vessels stand the punishment from mobile shore batteries? If they can produce their worth in fire value, then their loss, after producing a real fire effect, might well be worth their sacrifice. If not, then we must put these guns on the supporting ships and carry them in to a range where their fire will be effective.

Naval fire control methods require accurate bearing and ranges to navigation marks, tangents on shore lines, or auxiliary marks specially placed. Many gunnery experts contend that "this requirement, together with the necessity for observing the fire, practically precludes night firing in support of a landing." With a stable zenith instrument, accurate fire in range can be delivered thru a smoke screen, provided air spot can observe the fall of the shell. If we put phosphorus or some substance capable of leaving a lighted mark in shells can we use stable zenith director and plane spot at night? A submarine, just at dark, could actually plant special buoys to be used later as auxiliary aiming

points. The planes, by daylight reconnaissance, if any, or by special map study, should be familiar with the land area selected for attack. A flare or star shells would give the plane its location at night and the lighted substance in the shell would indicate their point of fall to the plane. While this fire and spotting might not be accurate for a single, specific target yet results would be very effective when shelling the beach or a particular area.

The 5" naval AA gun has the most modern indirect fire control system, making it capable of serving a dual purpose. We should increase the number of this type of gun on firing ships. The present allowance cannot be diverted permanently from their air defense mission.

Reduced charges produce a greater angle of fall but the mere reduction in the number of bags also reduces the accuracy. It has been determined that 8" powder in a 12" gun, with a chamber reducer, will produce a reduced charge having an accuracy equal to that of the 12" service charge. But have we the lighter web powder in sufficient quantity to rebag 8" powder for use in 12", 14" and 16" guns? Will we have it on M-Day?

Smoke may be very effectively used by the attacker. In all probability he would not in any case be able to see the defenders until on or near the beach so smoke would take away few advantages and afford a great protection. Gun flashes from enemy artillery would be obscured but plane spot and mast head observers might partly compensate for the lost observation. Naval air has a 50-pound smoke bomb which will burn on the water for four minutes. Smoke curtains may be layed by two planes and smoke shells and smoke boxes would play their part. Even in darkness, a smoke screen would block the enemy searchlight and prevent his observation of our ships and advancing landing boats.

Air bombs dropped on the beach prior to the arrival of the troops should take their toll and thoroughly demoralize the defender. An early flight along the beach dropping delayed-action bombs should produce its material and morale damage. These bombs may be set to explode at any time from one second to several hours later. The last bomb would be set to explode prior to landing; the enemy does not know their number or location; nerve racking, destructive and demoralizing—it could not be less. It is difficult to conceive just how a defender could prevent such an air action at night. Flares would illuminate the beach and target areas should be easy to locate—the water-line and inshore a few hundred yards.

If we could follow the sweepers with destroyers, tugs, and cargo vessels armed with land artillery, the 8" anti-submarine howitzers and 155^{mm} howitzers, and then, when within range, put on a bombardment with these guns, together with air bombs and smoke, much damage would be effected prior to the supporting ships reaching their firing positions. During such an advance, at least one support vessel per sector should be assigned to fire on operating searchlights, as well as an air bombing of searchlight areas. We must stop the operation of enemy search-lights, or mobile batteries will make it impossible to successfully sweep. If this is impossible, then we must render them impotent with smoke.

Then, a period of silence—no firing, while the firing ships and tows reach their positions. The first bombardment has warned the enemy and, when it ceases, he mans his defenses. Then the firing ships open with every available gun, Would it catch him unawares? Would it

work? I do not know. But one thing is certain — we must find some method that will work.

If secrecy and surprise has actually been effected up to this time, then we must decide whether to assume the risk, retain surprise and hope that our landing boats will override the wire and cut thru all but the very strongest, or engage in a long preliminary bombardment.

The question of firing from landing boats as they advance to the beach is a ticklish one. It is dark—4000 yards to go—a slight change in course would cause fire of one boat to make targets of other boats.

The use of light tanks in the initial landing is being advocated by many students of this problem. If it is practicable, and I see no reason why it should not be with the proper vehicle of approach, we may well imagine the destruction to beach defense machine-gun nests and small strong points which might be inflicted by a line of light tanks hitting the beach with the first wave.

We used to have old battleships and monitors which could be deliberately risked in supporting these operations but now they all are scrapped. The new 26,000 yard 155 mm gun in the hands of the defender, will make it extremely hazardous for a transport, heavy or light cruiser to get within range but this gun will not seriously damage a battleship. As battleships and heavy cruisers are the only ships that can outrange these guns, then, if we wish to land against an organized defense, we must use these ships and we must make their fire effective. If they can bombard the beach and then search the rear areas they may so destroy and demoralize the enemy supports and reserves that when the attacker has crashed thru the beach defense there will be greatly reduced enemy reserves capable of making a counter-attack.

We frequently hear discussion about the number of combatant ships that may be absent; how the enemy action may influence the amount of naval support available; that heavy ships, carriers and heavy cruisers may be on other missions; and that proper naval support cannot be furnished.

That may be partly true in a joint Army and Navy expedition, where large Army forces are attempting an invasion, with a base already established, but this is a fleet job, and, as the fleet will be unable to function efficiently without a base, the *necessary* support *must* be made available or the seizure of the base delayed until it is available.

Special ammunition will be necessary—high explosive, shrapnel, smoke, star shells, flares, special bombs. Ammunition ships will accompany the expedition and requisitions by the supporting ships will be filled prior to the attack. The quantity and type cannot be determined until a decision has been made as to the general tactical and supporting plan. Another reason for an early decision.

In ten minutes, one 14" battleship could, at a range of 13,000 yards, put 140 14" shells on the beach, and each shell would make a crater five feet deep and twenty-five feet in diameter. But too many craters are a hindrance to the attackers advance. Furthermore, such shells certainly destroy whatever they hit, but they do not hit often enough. We want a shell that will spread its damage laterally and search the area within its explosive radius and not simply bury itself in the ground and then burst in the air leaving a deep crater. In the naval attack on the Dardanelles forts, a gun could be put out of action only by a direct hit.

I have briefly mentioned the instruments we have available. We now pound the beach with the most intensive bombardment of which

the firing ships are capable.

How long that bombardment should last we do not know. We do know that thirty minutes was insufficient at "W" and "V" beaches at Helles.

We also know that in spite of the criticism of naval gunfire, the mobile army artillery failed again and again to destroy the Turks' wire and trenches.

I have analyzed 250 reports of naval gunfire at Gallipoli—139 from the naval view-point and 111 from army view-point and other sources not naval. Some of these cases are repeaters, reported by different sources. My score reads; favorable 169; favorable with limitations 14; unfavorable 42; unfavorable with limitations 25. By limitations, I mean that with certain possible corrective measures, they might have been classed as favorable. I doubt if an analysis of army artillery fire at Gallipoli for the same number of incidents would present a higher score.

A naval experimental practice at an area prepared for strong defense might produce some definite data on the subject.

The troops have reached that point in the advance to the beach where we must lift our fire to avoid firing on them.

What does our fire plan now call for?

We have star shells, flares and searchlights to illuminate the area. It will soon be daylight. We have spotting by planes and direct observation from firing ships. We must rake the area from the waters edge to at least 1500 yards inland in order to catch the enemy beach defense supports and reserves. We must be prepared to shoot up and bomb the area to the limit of our ammunition, always bearing in mind that our ammunition allowance must be considered in relation to the possibility of naval action with the enemy surface vessels in the theatre of operations.

We know the number of guns available.

We know the frontage each ship must cover.

We know how long the beach bombardment will last.

We can fire at least one salvo per minute.

From this, we can determine the number of salvos required and the time to commence this searching fire.

If smoke has not been layed by some other method, then just before the troops land, a salvo of smoke shell should be dropped about 1000 yards back from the beach and maintained until the first troops have completed their landing and are ready to advance.

From then on until communication from the beach directs otherwise, we must maintain a steady fire on enemy rear areas. The amount of ammunition available will effect the intensity of this fire, but we may assume at least one round per gun per five minutes.

When the assault elements are ashore and ready to advance, the fire is in accordance with the pre-arranged fire schedule or on request from troops ashore.

Gunnery Communications.

A word about gunnery communications as distinguished from communication in general.

— At the Dardanelles, the Fleet was hampered by the lack of information in its endeavor to support the troops. The Navy's unavoidable difficulties in picking up shore targets were seriously increased both by inadequate signal arrangements ashore, and by an omission to provide

the supporting ships, before the landing began, with full information regarding composition and tasks of the various portions of the force.

Shore signal stations were opened punctually, but too often they were unable to get into touch with anyone in authority on land who could give the fleet the information it most required.

Ships' logs indicate many messages between ships showing lack of information. At other times ships asked in vain for a point of aim when called upon to "open fire at once."

In reply to a message from the *SAPPHIRE* asking if her fire was doing any good during one of the Turkish attacks, the shore station replied, "Impossible to watch your fire at present."

An extract from the log of *H.M.S. EURYALUS* (flag of Admiral Wemyss) on April 27th, is of interest.

8:55 a.m. Shore station to *EURYALUS*.

Open fire on 168.K.2.

9:16 a.m. *EURYLUS* to *SWIFTSURE*.

Can you open fire on 168.K.2. or shall *EURYLUS*?

9:40 a.m. *EURYLUS* to *SWIFTSURE*.

Aëroplane has been sent for to spot on 168.K.2.

9:55 a.m. Adm. Wemyss on *EURYLUS* to Adm. Nicholson on *SWIFTSURE*: If you require an aëroplane for observing your fire on 168.K.2., will you communicate with aërodrome at Tenedos.

10:00 a.m. Adm. Nicholson to Adm. Wemyss.

Request that *EURYALUS* fire on 168.K.2. as we are firing on another important target.

10:05 a.m. *IMPLACABLE* to *EURYALUS*.

Borders report enemy advancing in large numbers on 168.K.2.

10:05 a.m. Adm. Nicholson to Adm. Wemyss.

Your 0955 I have already got an aëroplane spotting on 169. Our range is not quite clear for 168.K.2.

10:20 a.m. Vice Admiral C-in-C. to all ships.

Open fire on 168.K.2.

10:28 a.m. 87th Brigade at "X" beach to *EURYALUS*.

Enemy reported advancing down valley in 168.K.2.

They never did fire on 168.K.2.

During the evacuation of "Y" beach on 26 April, the *QUEEN ELIZABETH* could get no answer by wireless from any supporting ship. It subsequently transpired that wireless gear of supporting ships was temporarily out of action while they were hoisting in the wounded.

About 5:00 p.m., on 25th April, at Anzac, the fleet received a message that an officer had been trying to send back since 12 o'clock, noon, regarding the location of two Turkish guns near Andersons Knoll. In fifteen minutes the naval gun-fire opened on Andersons Knoll and the guns were silenced.

At "V" beach on April 25th, the attack was held up by wire entanglements, plainly visible to the *QUEEN ELIZABETH* and the *ALBION*, at a range of less than a mile, but neither vessel knew enough of the position ashore to be able to open fire. For the next hour, the sailors were obliged to stand idly by, while in full view of them, brave men continued to lose their lives in cutting the wire by hand.

Previous to landing it was believed that supporting ships would afford ample means of communication but the above incidents, which

are only a few of the many, clearly indicate that this hope was not realized and left much to be desired

To this fact we may attribute much of the criticism of naval gunfire in the early stages. It was difficult to pick up the target from the sea and at times ships had to abstain from firing altogether for fear of danger to their own troops or content themselves with random fire. On some occasions ships would even have to wait for corrections from a spotting plane until a destroyer could bring the message from the landing ground at Tenedos.

Communications between the transports at sea and in the harbor, fell down. This was a naval function and it had been thought the regimental signalers embarked on these transports would function. They did—at short distances with morse and semaphore, but they could not read nor use the flag hoists necessary for long distances nor could they attract the attention of individual ships. This resulted in a greater demand on naval ratings than the navy could supply.

When it came to dispatch boats, guard boats for delivering radios, cables, orders, etc., between ships and shore, there were not enough small craft, and great delay.

Enough has been said to show the great importance of gunnery-communications in operations of this nature.

Our communication details must go ashore with the first wave. They, too, will suffer casualties and we must provide, in subsequent waves, an ample replacement in signal personnel. Too many will do no harm and all can be used in forward areas. Too few may be the cause of a very critical situation.

We must have a gunnery-communication officer forward with the troops just as we have a naval gunnery liaison officer.

Let us assume that Colonel M is to attack hill 150 at 1000. He tells the naval gunnery officer that he wants a concentration on hill 150 from 0940 to 0955. The gunnery officer must get that information back to the proper supporting ships, and it must get back prior to 0940, indicating target, time commence, intensity of fire, time to lift and time to cease fire. The regimental message center is up to its neck in sending and receiving messages by every method from runner to wireless. To get this message thru, it must go back to the beach via BHQ and FHQ. Even if delivered, much time is lost and Colonel M wants that fire *when* and *where* he wants it. The most direct communication to the supporting ships is needed. To get this, we must have a naval communication group, or a marine group, solely assigned to gunnery messages, which goes forward with the leading troops. If this group cannot function at battalion headquarters, then it must go as far forward as possible and maintain runner or visual communication from the troop commander to the group.

These groups might be placed under the gunnery officer and serve a dual purpose—observation and communication. Such a group, when the British, on August 9th, crossed the ridge on Chunuk Bair and were dashing down toward Maidos with the Turks in retreat, might have changed the history of the World War.

We may then conclude that gunnery-communication is a *most important* essential in the establishment of a beachhead.

Air Forces.

Aircraft will play a tremendous part in any landing operation both for the attack and the defense. As time prevents a detailed discussion

of its many phases, I will merely mention some of the tasks that may be assigned to it.

1. Distant, tactical and battle reconnaissance.
2. Destruction of enemy air forces.
3. Spotting for naval and land artillery.
4. Bombing enemy ships, positions, airdromes, shore batteries, roads, depots, bridges, etc.
5. Use of flares and laying down smoke.
6. Operation from floating bases and preparation of landing fields for land bases and emergency fields.
7. Transportation of combat groups and evacuation of sick and wounded, by transport planes.
8. Supporting troops by combat action with machine-gun fire and bombs.
9. Special planes for use by C-in-C's and CG's staff to gain first hand information of the situation at any particular time.
10. Photography may be very important in the preliminary reconnaissance. A photograph often discloses that which the eye failed to see.
11. The assembly and operation of planes carried on transports and cargo vessels. The unavailability of nearby island bases or landing fields near the landing area, might make the carriers the only available place to accomplish this.
12. The coördination and control of all of the above activities.
13. The determination of the powers and limitations of the air-force present and the allocation of priority in assignment of air tasks.

Lack of air spot was one of the greatest handicaps suffered by the British Navy at the Dardanelles.

If the naval attack on the Straits or the army operations at Gallipoli were refought tomorrow, and both sides had an efficient air force, the campaign would present many strange angles not contemplated as it was fought.

Tactical Plan.

I have frequently, in this paper, referred to a tactical plan. I have tried to present the major elements that go to support that plan. When all of the forces and agencies that are contributing their naval and military effort to execute a plan, have produced a solution to their individual tasks; when these individual tasks have been coördinated and tied together in a general plan by the respective naval and marine commander; when both naval and marine plans have again been analyzed by the staff of the C-in-C and approved by him; then, and only then, do we have a tactical plan.

In conclusion.

Accepting the premise that a fleet cannot function without a base, I have tried to point out—

That in case of war, the Marines will be required to seize a fleet base.

That the Navy will have to land the Marines and furnish the necessary support.

That it is a most difficult operation to put a landing force on the beach.

That it is essential that once landed, this force must receive powerful and adequate support.

That our naval force is weak in certain essentials necessary to that support.

That this weakness is due, in part, to lack of suitable equipment, lack of suitable gunfire and ammunition, and a lack of thorough comprehension and understanding of the details essential to its preparation and execution.

That this lack of understanding is due to lack of combined training.

That matériel readiness may be achieved even tho personnel readiness is not all that is to be desired.

That improvement and development of matériel readiness for landing operations is a matter of great and vital importance to the Navy and Marine Corps.

That experimental exercises with landing boats, guns, ammunition, tanks, aircraft, bombs, smoke, land and underwater obstacles, fire control observation, spotting, communications, by day and by night, with present and newly developed equipment and matériel, should be made a part of the fleet major training schedule and not relegated to an occasional investigation.

That the naval service has a laboratory ready and capable of conducting these experiments.

That a consistent, constructive effort to remedy the present deficiencies in naval support can be remedied.

And finally,

That we have two courses of action open to us; to utilize the mental, material and financial means available to produce an organization trained and equipped for success, or remain in the fog, and risk failure.

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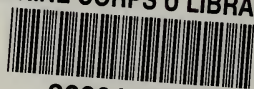
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